United Nations
Educational, Scientific and
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Organisation
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Organización
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Организация
Объединенных Наций по
вопросам образования,
науки и культуры

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联合国教育、
科学及文化组织

Designing effective monitoring and evaluation of education systems for 2030:
A global synthesiss of policies and practices

This is a preliminary version, not for quotation

UNESCO Education Sector
Division for Policies and Lifelong Learning Systems (ED/PLS)
Section of Education Policy (ED/PLS/EDP)

January 2016

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List of Acronyms

ADEA	Association for the Development of Education in Africa
AKF	Agha Khan Foundation
ANA	Annual National Assessment
ARNEC	Asia-Pacific Regional Network for Early Childhood
ASER	Annual Status of Education Report
CARICOM	Caribbean Community
CIDA	Canadian International Development Agency
CTE	College of Teachers' Education
DBE	Department of Basic Education
DEMMIS	District Education Management and Monitoring Information System
DFID	Department for International Development
DISE	District Information System for Education
DRC	Democratic Republic of Congo
ECCE	Early Childhood Care and Education
ECD	Early Childhood Development
EFA	Education for All
EMIS	Education Management Information System
ESP	Education Sector Plan
EU	European Union
FERPA	Family Educational Rights and Privacy Act
FBO	Faith Based Organization
FPE	Free Primary Education
FMIS	Financial Management Information System
GDP	Gross Domestic Product
GER	Gross Enrolment Ratios
GMR	Global Monitoring Report
GTZ	The Deutsche Gesellschaft für Internationale Zusammenarbeit
HDI	Human Development Index
HIV	*Human Immunodeficiency Virus*
ICFES	Instituto Colombiano para el Fomento de la Educación
I/NGOs	International / Non-Government Organization
ICT	*Information and Communications Technology*
IIEP	International Institute for Educational Planning
ILO	International Labour Organisation
KICE	Korea Institute for Curriculum and Evaluation
LAC	Latin America and the Caribbean
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals
MEHE	
MOE	Ministry of Education
NAEP	National Assessment of Educational Progress
NGOs	Non-Governmental Organisations
NIE	National Institute of Education
NIER	National Institute for Educational Policy Research
NCHRD	
NORAD	Norwegian Agency for Development Cooperation
NUEPA	National University of Educational Planning and Administration
ODI	Overseas Development Institute

OECD	Organization for Economic Co-operation and Development
PISA	Programme for International Student Assessment
PTA	Parent Teacher Association
RBM	Results-Based Management
SACMEQ	South African Consortium for Monitoring Education Quality
SA-SAMS	School Administration and Management System
SAS	Student Assessment System
SMC	School Management Committee
SRKS	School Record Keeping System
SMC	School Management Committee
SSE	School Self Evaluation
SSRP	School Sector Reform Programme
TES	Teacher Evaluation System
TI	Transparency International
TIMSS	Trends in International Mathematics and Science Study
TMIS	Teacher Management Information System
TVET	Technical Vocational Education and Training
UAE	United Arab Emirates
UIS	UNESCO Institute for Statistics
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNESCWA	United Nations Economic and Social Commission for Western Asia
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WB	World Bank
WEO	Woreda Education Office
WSE	Whole School Evaluation

SECTION I - MONITORING AND EVALUATION IN EDUCATION

1.1 Introduction

The current discourse on global education notes a shift in focus and the emergence of new challenges since the Dakar Global Education Forum. This warrants new impetus to periodic measurements of progress made in the education sector, including the diverse nature of the Education 2030 agenda that encompasses varying themes such as quality, gender, adult literacy, youth and skills, early childhood care and education, inequality and governance, marginalized populations and armed conflicts. It is important to note in this context that the new education 2030 Framework for Action lays emphasis on developing and implementing a focused, evidence-based and dynamic monitoring and evaluation system for the education sector in order to adequately meet the demands generated by the new challenges mentioned above.

It is now generally accepted by all that sustained development hinges on good governance and accountability. In order to achieve this, stakeholders look for evidence-based decision-making. They believe in the crucial role of M&E systems for doing this. While the proper assessment of quality aspects of the teaching-learning mix is no doubt an important function of M&E, measuring the performance of other impact aspects of education, such as decentralization, school autonomy and greater accountability for outcomes, are equally important functions. Even though M&E systems form a part of every education system, many of them suffer from lack of or poor policy design and weak implementation. Most M&E systems try to measure performance; however, their precision, effectiveness and efficiency are questionable. The availability of a legal framework, political will, capacity of concerned personnel, accessibility and reliability of evidence etc., are the other critical issues that influence the level of impact and the sustainability of good M&E systems.

Acknowledging its mandate to support Member States in this regard, UNESCO has taken up a Comparative Review of M&E systems of the Education Sector with the help of country case studies obtained from different regions. The main expected deliverable of this exercise is a global report entitled “A Comparative Review of Policies and Practices of Monitoring and Evaluation of Education Systems”.

This UNESCO initiative intends to greatly contribute to a proper understanding of how the different nations have tried to monitor, measure and assess the performance of their education systems in order to address the major issues identified vis-à-vis the achievement of their education goals. This is expected to facilitate the Education 2030 discussions on the subject. By providing a link to nations at the policy level, this review will provide a way forward to Member States to further review, refine and re-design their M&E systems so that they can properly address all their critical and emerging needs related to the Education 2030 agenda.

The involvement of all stakeholders in the M&E process would greatly enhance its ownership by them. M&E in the education sector, as in the other sectors of development, has gone through several stages of evolution over the years, starting from broad input-output monitoring, through project-based monitoring systems to meet the needs of donor agencies, and onto the current discourse with its focus on providing timely and reliable data on evidence-based indicators of progress at the different levels of implementation, including at the local school and community levels. The ultimate aim of this UNESCO initiative is to help Member States to develop and implement a dynamic M&E system which would not only help systematically monitor and evaluate the key issues of the education sector but would also be timely, reliable and tailored to meet their own special needs of improving the quality, relevance and coverage of their education sectors.

1.2 Changing Context of Monitoring and Evaluation in Education

Most governments have data systems, simple or sophisticated, already established for measuring the results of any programme on the target group/population, the cost effectiveness of their spending and the outputs of the programme. However, not all governments have effective and efficient systems to monitor and evaluate performance in terms of the outcomes of all their programmes. Only a few countries, especially in the developed world, possess such well-developed M&E systems for measuring not only the outputs, but also the outcomes of education. For doing this effectively, the governments of these countries have developed high performing, dynamic and sustainable M&E systems. Countries such as Chile, Brazil, Mexico and Colombia in Latin America, the Republic of Korea, Singapore, Australia and Malaysia in Asia, and South Africa, can be cited as having such well-developed and gradually evolved M&E systems. However, it must be noted that the scope of M&E in education is not static, and that it may need to accommodate the dynamics of perceptions and needs of the sector which again may vary with the changing times. The evolution of M&E systems cannot, therefore, be seen as a linear process but more as a dynamic process that has many variations in its responses to changing needs in different country contexts. To understand the nature of an M&E system in relation to its role in the education sector of a country, the M&E can be classified into four stages of development as elaborated in Section II: Analytical Framework.

The growing importance at the country level of the effectiveness and efficiency of funding for education has led to the emergence of issues of governance and transparency, such as accountability and sustainability. The importance of involving stakeholders, including civil society and the local community, has led to a growing interest in participatory approaches to M&E.

This new approach to M&E has also confirmed the necessity of 1) the introduction of a well-established system of reporting on programmes and initiatives, 2) the availability of quality and reliable data, 3) the efficient coordination among all departments and stakeholders at all levels, and 4) the availability of necessary infrastructure and capacity for implementing the improved system.

Another significant change in perception that has been taking place in some countries as a result of multi-donor and multi-sector approaches is the metamorphosis of M&E from being predominately a donor-led exercise into one with a patent increased interest in country-led approaches. The resultant assessments and evaluations conducted in partnership with a broader range of stakeholders, including the civil society and the local community, have mainly been driven by a desire to internalize such assessment capacities within the concerned country contexts.

SECTION II – ANALYTICAL FRAMEWORK

2.1 Exploring M&E in Education: Conceptual Framework

2.1.1 Definitions of monitoring and evaluation

Monitoring and Evaluation (M&E) are two distinct but complementary processes that mutually reinforce each other. In general, M&E is designed to monitor the impact of a policy, or progress of programme activities, against the overall goals, objectives and targets. M&E also assesses the outcome relevance of an activity, and the impact of a programme, or effectiveness of a policy, as well as its efficiency and sustainability.

OECD-DAC (2002) defines *monitoring* as *"*the ongoing, systematic collection of information to assess progress towards the achievement of objectives, outcomes and impacts," and it defines *evaluation* as "the systematic and objective assessment of an ongoing or completed project, programme or policy, its design, implementation and results, with the aim to determine the relevance and fulfilment of objectives, development efficiency, effectiveness, impact and sustainability."[1]

It would be germane to this analytical framework to digress on the continuity aspect of both monitoring and evaluation, which cannot be divided into water-tight compartments. Monitoring and evaluation is in the nature of a continuum, where activities in the initial phases focus more on inputs and outputs, and their timeliness, and then the process progressively turns in more of impact data and becomes more of an evaluation of impact, with special studies added.

2.1.2 M&E and policy making

Since the priorities and the objectives assigned to M&E systems are moving towards ensuring greater accountability and promoting more effective and efficient policymaking, new concepts and approaches have been introduced by various institutions, particularly development agencies,. From them, some of the emerging key concepts related to M&E in the development context are highlighted below.

Concepts

- Evidence-based Policy-Making (EBP)
  Evidence-based policy helps it to be more effective in achieving the desired results. Recently there is increasing acceptance of this approach among all development stakeholders. Evidence must be based on data that is comprehensive, timely, relevant and reliable. To achieve this, effective and comprehensive M&E systems are required as data must be collected at all levels, including disaggregated data that is collected at the micro level and focused on specific aspects of concern.

[1] http://www.gsdrc.org/go/topic-guides/measuring-results/context-and-definitions

- Results-Based Management (RBM)

  In the late 1990s, the United Nations initiated results-based management systems to improve the organization's effectiveness and accountability.[2] The UNDG RBM handbook (2011) defines RBM as "a management strategy by which all actors, contributing directly or indirectly to achieving a set of results, ensure that their processes, products and services contribute to the desired results (outputs, outcomes and higher level goals or impact) and use information and evidence on actual results to inform decision-making on the design, resourcing and delivery of programmes and activities as well as for accountability and reporting." Thus, M&E becomes an essential element to ensure that results are being achieved. It also provides invaluable information on lessons learned for future decision-making through advocacy, as described below:

FIGURE 1: The RBM life-cycle approach

Source: UNDP, Handbook on Planning, Monitoring and Evaluating for Development Results, 2009.

M&E in the RBM system is quite different from the more traditional M&E approach. The traditional approach is designed to address compliance, simply addressing the "did they do it" question. It looked more at questions of mobilization of inputs in time, completion of planned activities, and deliverance of intended outputs at the end of the project. It is usually designed to provide information on administrative, implementation, and management issues, and does not provide policy makers, managers and stakeholders with causality, that is, the reasons for the success or failure of implementation of a policy or programme/project. [3]

While the RBM approach focuses more on monitoring and assessing performance of a project, programme, or policy, it also helps to answer other related questions, such as,

[2] http://www.undg.org/docs/12316/UNDG-RBM%20Handbook-2012.pdf

[3] https://openknowledge.worldbank.org/bitstream/handle/10986/14926/296720PAPER0100steps.pdf?sequence=1

"Are the goals intended at the policy formulation or programme design stage being achieved?" and "How can any policy impact or programme achievement be proved?" In this regard, more qualitative and quantitative information at the output level is gathered to determine whether and how and they contribute toward the achievement or progress of the outcomes. This is usually carried out in conjunction with strategic partners in order to understand the success or failure of the partnership strategy in achieving the desired outcomes.[4]

2.1.3 M&E in the Social Development Context

Social development can be briefly stated as the process of organizing human energies and activities at higher levels to achieve greater results.[5] It is about improving the well-being of every individual in society by investing in people.[6] The impact of such investments on the target beneficiaries need to be measured in order to assess the extent of success in the achievement of targets set. The impact aspect is linked to some key issues, such as investment/aid effectiveness, accountability and sustainability of the project.

Most definitions of M&E in the development context look at providing those involved in the programme implementation process with the right information so that they can report on any early indications of **problems** or issues, as well as provide early indications of the likelihood of achieving targets or desired results. M&E also focuses on the achievement of financial targets set for different points in time and includes systematic and objective evaluation of progress towards the achievement of desired outcomes.

Monitoring in the development context is critical to properly guide the programme implementation process. A good M&E system will make the evidence-based decision-making process more practical and effective. Evaluation is not a one-time event, but an exercise involving assessments of differing scope and depth carried out at several points in time during a programme cycle in order to assess its impact on the target group or issue. Evaluations provide insights and knowledge that could be built into the next programme cycle to address any potential problems or to reduce delays. As an implementation proceeds, the same activities of monitoring gradually acquire a qualitative character with a greater focus on the outcomes of the investment made, problems faced, new challenges identified and, via these things, on the overall impact of the implementation process of a project or a programme.

Due to the nature of development concerns and the growing of body of literature on what constitutes good development practice, the concern for what needs to be monitored, measured and evaluated is also changing. As more multi-donor and sector-wide programme funding strategies are being considered the way forward, the concern for aid effectiveness, and locally led multi-

[4] For further information of the difference between the two types of monitoring system , please see "Fukuda-Parr, Lopes, and Malik 2002, p. 11".

[5] http://www.icpd.org/development_theory/SocialDevTheory.htm

[6] http://www2.gnb.ca/content/gnb/en/departments/esic/overview/content/what_is_social_development.html

stakeholder approaches and their impact on their target communities seem to dominate much of today's discussions on M&E.

Particularly, in the context of countries with diverse socio-economic and cultural patterns, data collection at the macro levels may not pinpoint all of the problem areas. In such cases, data on problems at suitable micro levels will greatly help to address these specific concerns. For instance, data on why certain communities stop sending their female children to schools upon their reaching puberty may be one such micro level issue needing reliable local feedback. Similarly, a well-drawn up advocacy programme can ensure timely and effective utilization of quality data for policy research, policy-making and programme implementation. This, in turn, can help save lives, reduce poverty and improve performance, particularly in developing countries. The entire EBP process should be built into the overall M&E system in order to make the mechanism fully automatic.

It is equally important to develop an effective policy research and advocacy for policy change model and build it into the overall M&E system in order to make the mechanism fully utilize the evidence gathered. Without having such chain actions, this outstanding concept would only remain on paper and its benefits never enjoyed.

2.2 M&E of Education Systems

All concerns raised within the context of M&E are the result of various global, regional and national level discussions and debates of the post-Dakar Education forum in 2000. The drive to achieve global targets in education has introduced new key concepts, such as the 'expanded vision of basic education', 'access to equitable and quality education for all', 'lifelong learning to youth and adults' etc. All of these have affected the way M&E systems have been designed and implemented in many countries around the world.

The paradigm shift in M&E towards performance-based and results-oriented outcomes in the development context, along with current education reform trends paying attention to quality in education, has greatly influenced the current approaches and practices of M&E in the education sector.

2.2.1 Understanding M&E Systems in Education Sector

One of the main purposes of M&E in education is to ensure that equitable and quality education is being provided to all of the population and at all levels. Quality education is a multi-dimensional concept that takes into account the quality aspects on input (human, material, and financial), process (teaching-learning and effective management practices), and outputs and outcomes (the learning outcomes and quality of results) (IIEP: 2007).

From the aspect of monitoring, the following typology can be used to review the assessment of the quality of education in terms of inputs, processes and outputs.[7]

Types of monitoring

[7]Typology of Educational Monitoring System (Richard, 1988), Educational Evaluation and Policy Analysis, Vol. 10, No. 2 (Summer, 1988), pp. 106-116.

- Compliance Monitoring – focusing on inputs
  This is a bureaucratic type of monitoring to ensure that the educational institutions comply with predetermined standards and norms set by rules and regulations. It is mainly focused on educational input of teachers, textbooks, classrooms, teaching equipment etc.

- Diagnostic Monitoring – focusing on processes
  This type of monitoring focuses on the instructional processes relating to what happens in the classroom and whether the students are actually learning what they are supposed to learn. Since the teaching-learning process is equally as important as input variables in education, having such monitoring would give insightful information on explaining the quality of education provided by the educational institutions.

- Performance Monitoring – focusing on outputs
  The emphasis of this kind of monitoring is on the academic achievement of the students through testing to see what results have been yielded by the investments made in education.

Within a single education system, such types of monitoring, with different instruments, may co-exist, serving different purposes. Some typical M&E components that one can find in most countries can be classified in the following five categories.

Components of M&E systems

- School record keeping system
  This aims to keep information at the school level. This typically includes data on students (school entrance, attendance, academic achievements etc.), teachers (individual profile of teachers), finance (school budget and expenses), and physical facilities (quantity and quality of school building, classrooms, furniture, equipment etc.). Usually information from such systems are consolidated and fed into other M&E systems, such as EMIS.

- Statistical data system
  Often called Education Management Information System or EMIS, this is designed to collect, compile, collate and analyse school level data (students, teachers, facilities, finance etc.) for policy and programme formulation, implementation and monitoring at different administrative levels.

- Resource management systems
  These could include (i) teacher management (or Teacher Management Information System - TMIS), which is designed to support the management of teachers' recruitment and deployment, and (ii) financial resource management (or Financial Management Information System - FMIS), which conducts the transactions and monitors the financial status of education institutions. (In some cases, such systems are part of a larger system usually managed by the Ministry of Finance.)

- Performance evaluation system
  This includes (i) a School Inspection and Evaluation System which is carried out by the Ministry of Education to observe and inspect whether schools comply with the rules, regulations and standards set by the relevant authorities, and (ii) a Teacher Evaluation System whose function is carried out by relevant education institutions to evaluate the performance of teachers. (In some cases, such a system is integrated into the TMIS.)

- Student evaluation system
  This can include (i) an Examination System designed for the purpose of certifying or selecting students, usually covering the main subject areas in the school curriculum, and (ii) a Student Assessment System designed to provide an estimate of the achievement level in the education system as a whole at a particular age or grade level.

	Focus of Educational Process			Objective
	Input	Process	Output	
School record keeping system	X	X	X	Supporting school level management
Statistical data system	X			Providing input for policy and programme at different administrative levels
Resource management system	X			Ensuring efficient investment in education
Performance evaluation system		X		Ensuring effective teaching-learning process
Student evaluation system			X	Measuring the results of the education provision

There are some major challenges to the establishment of a good and useful M&E system. These relate mainly to aspects of coordination and synergy between sub-systems. Many countries typically have provisions for the M&E components as mentioned above, but often these are not well-coordinated, and there is no strategy or systematic mechanism to ensure that these different systems mutually reinforce each other to create synergy and support for the performance of the education system in a holistic and comprehensive manner. Furthermore, due to the interrelationship among education sub-sectors (pre-primary, primary, secondary, post-secondary and tertiary), coordinated effort among M&E systems should be established not only within the sub-sectors of education, but also across all other concerned sectors.

Evaluation criteria

- Policy or programme relevance
  It could relate to the country's 'real needs' as opposed to the 'perceived needs' on which funding could be based.

- Effectiveness
  Effectiveness is about doing the right thing, i.e. in providing the right amount of relevant and quality information to the right users in the right time. An effective education programme leads to increasing opportunities to learn in an equitable manner and in a sustainable way.

- Efficiency

Efficiency is about doing things right, i.e. functioning effectively with minimum resources.

- Impact and sustainability
  In the education context these concepts could refer to the overall effect any policy and programme has on the target community or on the socio-economic development of a country etc. They can help address both wider policy related questions as well, for example at the community/local level where significant change can lead to better progress among the target community.

2.2.2 The Evolution of M&E Systems in the Education Sector

As in other development areas, M&E in education varies widely in approach and methodology depending on the objective, purpose, socio-economic context and the target group/community. Since education includes formal, non-formal and informal modes of learning that cover all levels and ages from pre-school to adult learning, it is difficult to have one framework to monitor, measure and evaluate the entire spectrum. However, there are some common issues, challenges and aspects that can be considered to many education programmes, such as access and coverage. In every education project and programme, a component on M&E is likely to be found.

M&E in education has evolved over the years in response to changing needs perceived by education planners, implementers and other stakeholders. Sector-based or programme-based M&E in its initial stages was often found to be too broad, focusing mostly on financial and input-output indicators. At the same time, project-based M&E systems were developed by the donor agencies to demonstrate that the intended activities were implemented according to project plans and the expected outputs were obtained. Gradually, project-based M&E systems merged with the concerned programme/sector M&E systems. For example, in most donor-aided projects, special earmarking of funds for capacity building both in terms of infrastructure and human resource skills to establish and run sound M&E systems was made. When such projects were wound up, the systems so created were often continued in the initial stages within the scope of the donor-aided project areas but within the overall sector M&E system of the beneficiary states. However, total merger within the sector was gradual because the scaling up of successful project-based M&E systems took some time since the beneficiary states had to find the needed resources (financial, infrastructural and skilled human resources) for inclusion in their regular sectoral programmes and budgets.

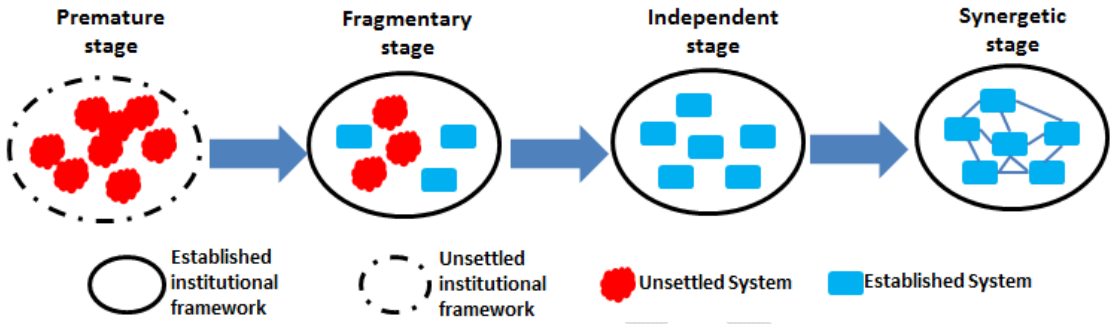
However, the extent to which such M&E systems became inclusive of the requirements of indices as per needs of micro level planning and implementation varied between sectors.

Proposed common framework for assessing the level of development of M&E systems

Although the pace, the path and the evolution of the M&E in the education sector have depended on each country's educational development context, this review proposes the following development stages on the basis of the above-mentioned understanding. The different development stages of M&E system in education sector can be classified as follows:

- Premature Stage: Stage of establishing favourable and conducive institutional conditions to set up a functional M&E system.
- Fragmentary Stage: Reasonable institutional and organizational conditions exist and M&E systems are becoming fully functional.

- Independent Stage: Different M&E systems are established and functioning, but they are operating as separate entities to serve their confined scope.
- Synergetic Stage: Different M&E systems are functioning harmonically and in a coordinated manner to provide effectively and efficiently relevant and quality information for policy actions.



Significant variations across developing countries

The Premature Stage of M&E can be seen largely in countries facing conflict situations, such as Somalia (Puntland, Somaliland and South Central Zone).

Many countries in the developing world would fall under either the fragmentary or the independent stage of M&E. Both stages use a conventional approach focusing more on measurement and catering to the needs of the funders (donors and policy makers), and less towards beneficiaries and local people. Both also focus on conducting evaluations to make judgements more than focusing on the empowerment of target groups and outcomes indicating impact. These conventional approaches to M&E are designed as externally driven exercises that are concerned about cost efficiency and usually rely heavily on a quantitative approach for assessments. Therefore, often M&E is seen as a tool to control and manage programmes and does not involve beneficiaries or other stakeholders in the planning and implementation stages. The heavy emphasis on quantitative methods for measuring results tends to ignore the qualitative information which is often linked to local socio-cultural contexts and may help to provide a better understanding of the nature of the outcomes and the overall impact of a programme.

The highly evolved 'synergetic stage' concentrates on the use of new and innovative ways of M&E. This approach is expected to look at ways of making M&E more participatory and inclusive. It is expected to take people's needs and the local socio-cultural contexts more seriously into account. However, this is not extensively practised in many developing countries; although there are signs of some attempts being made towards inducting such participatory approaches to M&E. No matter which advanced stage of development that an M&E is in, trends towards using innovative ways of M&E can be seen in countries like India, Bangladesh, Kenya, Sri Lanka and South Africa. These countries have either strong civil society/community organizations, or they have a very active media culture which propels them towards attempts to make the M&E process more participatory in nature. It is interesting to note that such participatory approaches to M&E have evolved more in non-formal areas of education, such as adult literacy, life skills and ECCE. Some of the emerging issues in education, such as citizenship and peace education also warrant a more participatory M&E due to their people-centric nature.

2.2.3 What makes an effective M&E system in education?

An effective M&E can help not only governments, development partners and donors, but all those concerned with education and its quality and coverage. Since such an M&E gathers and disseminates robust data as evidence, it provides a reliable base for effecting improvements to quality and reach of education to all. This base should be made accessible to all the stakeholders. Therefore, it would be helpful to involve all the stakeholders in the process of M&E as well so that its ownership by all the stakeholders gets enhanced.

Furthermore, the M&E system should be regarded as a long-term effort which requires a strategic commitment from the outset (Marriott and Goyder2009). There are six crucial components involved in building the sustainability of M&E systems in which each of the following dimensions needs continuous attention and care. These are: demand, clear roles and responsibilities, trustworthy and credible information, accountability, incentives, and capacity.[8]

2.3 Existing Research and Knowledge Gaps

In response to the growing need for better M&E system in education, various research and studies have been carried out particularly by the international development agencies.

A World Bank initiative, SABER "the Systems Approach for Better Education Results", attempts to evaluate different aspects of education based on each country's needs, such as the quality of education policies against evidence-based global standards, using new diagnostic tools and detailed policy data collected for the initiative. The domains of interest include the EMIS system, which provides data and information necessary for effective system management. Currently more than 100 countries are participating in this initiative and are producing country reports.[9]

In addition, the UIS (UNESCO Institute for Statistics) has developed, in collaboration with the World Bank, the Data Quality Assessment Framework (DQAF) for education statistics, and has conducted qualitative assessments of education statistics in a number of countries. The main purpose of this framework is to describe the quality of the statistics produced by the education information systems**.**

It has been found that many of the available reviews and studies focus on particular aspects of M&E systems in education. This UNESCO comparative review will provide findings and analysis along with policy advice on what the important considerations and criteria are for designing effective, efficient and sustainable M&E systems with a holistic view of the education sector. Moreover, it will aim at highlighting the best practices at the regional and national levels, as well as providing key learning points for stakeholders. This will inform and guide new and emerging policy and planning needs in the post-2015 education context.

2.4 Research Questions and Issues Covered by this Analysis

Methodological approach

[8] http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2004/08/27/000160016_20040827154900/Rendered/PDF/296720PAPER0100steps.pdf

[9] http://saber.worldbank.org/index.cfm

This review seeks to conceptualize M&E systems in education with a holistic approach that aims at monitoring the performance of the education system and providing the accountability of information to policy makers, as well as the public, in order to improve educational processes and results. It will also look at more systemic aspects and sector-wide perspectives of how different M&E systems and components are interacting among these systems, and also to what extent they are aligned with policy needs to provide relevant information for making informed policies, rather than exploring the detailed characteristics of each system.

The review is not aimed at coming out with any M&E framework or model, rather at promoting an active dialogue and intensive research to help policy makers, planners and education practitioners, especially at the national level, to better design their M&E systems in effective, efficient and sustainable manner in order to formulate, implement and monitor their education policies and programmes.

M&E systems in education are at different stages of evolution in different countries, as mentioned in the previous section. In each stage, countries have faced various sets of challenges and issues depending on their individual contexts. In their attempts to overcome such challenges and take the systems to the next higher level, they have had to deal with many contributory factors, such as, technical support, capacity building, infrastructural needs, financial resources, inter-sectoral coordination, coordination with partners, etc, the status of which differ as between countries and over periods of time.

The ultimate aim of all these efforts has been to place the M&E system at the systemic level in order to provide relevant and useful information and implementation feedback for better policy formulation with evidence. At the same time, the prosperousness of M&E systems also greatly depends on the intention and interest of policy makers and their policy actions on it. It is important to know how such M&E systems and policies are inter-acting with each other for mutual benefit.

In conclusion, the purpose of this review is to support Member States in designing/strengthening effective and efficient M&E systems for better and more responsive education policies. More specifically, the review intends to:

- analyze various aspects (roles, relevance, process and quality) of M&E systems in education and related evidences and summarize them to help policy dialogue;
- identify innovative and good policy and implementation practices;
- facilitate exchange of experience, ideas and promote cross collaboration among countries; and
- provide them with key findings and a set of policy recommendations aimed at achieving more effective, efficient and sustainable M&E systems in education in the post-2015 era.

The study draws on different experiences from several countries with regard to their M&E systems in education sector at various stages taking into account different regional perspectives and development contexts.

Research spectrum

Different M&E systems can be seen in the different levels of education activities to monitor their implementation and results. There is, for instance, a project-based M&E system where its functions are confined to the scope of the project. Some M&E systems are designed at the programme level where the scale, scope and duration are bigger than at the project level.

This review looks at the system level where the education sector serves national development. Although the entire education sector is composed of various sub-sectors (from pre-primary to

tertiary), the focus of the review is mainly on basic education, where significant resources of public spending are made.

Research Questions

The review is framed around the following key research questions related to policies and practices on M&E in different regions and some select countries:

- How have M&E systems in education evolved (different stages of maturity)?
- What are the factors that have significantly contributed/influenced towards achieving effectiveness and efficiency of M&E systems at different stages, and how are these systems moving towards the next higher level?
- What are the interactions between M&E systems and policies, and how do they work?
- In the light of emerging issues, dynamic and inter-related contexts of future education development and learning from past experiences, how should M&E be designed to cater to policy needs (set of policy recommendations).

SECTION III - MAIN FINDINGS

3.1 How have M&E Systems in Education evolved?

Over the last few decades, monitoring has been an integral part of the education process in most countries of the world. For example, school level practices, such as school registration, school attendance and staff registration were introduced to monitor performance at the local level. Furthermore, basic education data, such as the number of schools, geographic location of schools, student enrolment and number of teachers were also gradually collected as part of national education statistics. Countries, such as Bangladesh, Sri Lanka, Kenya, Uganda and Tanzania,[10] to name a few, all had simple monitoring tools in the 1990s. Some countries in sub-Saharan Africa still continue to use simple monitoring tools due mainly to their unstable political and socio-economic contexts.

Since the Jomtein EFA conference (1990) and the introduction of the EFA initiative, there has been increasing awareness of the importance of monitoring education. This has further been reinforced and has gained global attention since the Dakar Global Education Forum in 2000. Furthermore, advocacy and the provision of needed assistance for systematic monitoring as part of EFA process by the UN (UNESCO, UNICEF and the World Bank) and bilateral agencies (USAID, OECD, EU, CIDA, NORAD, GTZ and ODI) have resulted in the emergence of better ways of monitoring in many developing countries. However, such support in the form of the provision of financial resources and capacity development inputs to the countries concerned has mostly faced, barring a few exceptions (especially in Latin America and Asia). The first is the challenge of willingness on the part of the beneficiary countries to internalize the model. And the second is the lack of expertise in their regular M&E systems and the capacity to find the needed resources to sustain such a system on their own.

The further evolution of M&E in recent times has resulted in some significant shift in the way M&E functions and the way it is being utilized by governments and other stakeholders, such as development partners, NGO's and local communities. Three significant shifts in the development of M&E systems have taken place either concurrently or independently depending on the socio-economic and political contexts of different countries. These shifts may be identified as coming from 1) a simple compliance-based to a more performance-based M&E; 2) a programme-level orientation

[10] National EFA Assessment Reports of Sri Lanka (2008), Bangladesh (2008), Kenya (2011), Uganda (2012) and Tanzania (2012).

to a more holistically-oriented level for M&E; and 3) a centralized focus to a more decentralized focus in the M&E system. There may not be any clear lines that demarcate these shifts since the changes can be interrelated. What is important to note here is the fact that these significant shifts have largely determined the way in which information systems have been developed, structured and implemented. Some of the critical transformations observed are discussed below.

3.1.1 The organisation of M&E systems in education has been increasingly decentralized

Reforming M&E systems to respond to decentralization reforms in education

As countries have moved towards decentralization of their education systems, demand has grown for evidence on the performance of the systems. As a result of this, as well as due to changing priorities and consequent political commitments of governments, the M&E systems have tended to place more responsibilities in this regard on the regional, district, and school authorities. Many governments have re-organized their monitoring systems as part of a decentralization process to strengthen the management of education reforms. In parallel, the focus has shifted towards learners and outcomes, hence, towards performance- or results-based monitoring and these shifts led to the development of various components responsible for capturing detailed information about each student and the context in which teaching-learning takes place. EMIS, TMIS, Learning Assessments, School Inspection, etc. are some of the components that underwent significant change or got adapted more towards meeting the new demands that emphasize assessing performance rather than simple compliance-based monitoring.

In Latin America, Brazil, for example, has one of the most complete and complex M&E systems in the region which caters to the demands from three levels: federal, state and municipal. Their M&E system has evolved to ensure that all components, such as SRKS, FMIS, EMIS and SAS, are all interconnected and function in a coordinated way.[11] Similarly in Chile, various components of their M&E system, such as the School Inspection Evaluation System, EMIS and FMIS, are well developed and cater to all stakeholders and the community. Also in Chile, where the Adjusted Voucher Law (Ley SEP) was adopted to increase the level of school accountability based on their performance, parents use the school information system to make informed decisions regarding the choice of schools for their children (Elacqua and Alves, p. 18, 2015). All these may be attributed to the decentralization of the M&E system., In Pakistan, decentralized M&E has helped in the collection of gender disaggregated education data. This has helped the system to monitor the participation of girls in the province of Punjab in Pakistan (World Bank, 2007).[12]

Using M&E systems to inform and engage the local community in the management of education

During the past decades, there has been a growing demand for more evidence and accountability from donors and other stakeholders of education, especially local communities who have been evincing interest in knowing what happens at their local level so that they can participate more effectively in improving the local education provision. Thanks to many international development efforts, such as EFA and the MDGs aimed at better quality and more equitable education, the management of education has undergone certain structural changes intended to bring it closer to the 'user', particularly to the local level with a view towards giving them a greater stake in the management of the local education system. The goal of this process has been to increase accountability, oversight and responsiveness.

[11] Elacqua and Alves. 2015. (draft) M&E in Education in Latin America, UNESCO.
[12] World Bank. 2007. "Pakistan—Punjab Province: Public Financial Management and Accountability Assessment." Integrative Fiduciary Assessment No. 39761, World Bank, Washington, DC.

Decentralized systems try to take into account the local needs through efforts to improve the participation of all stakeholders in a sustained manner. Some countries, such as Chile, have ensured easier access for parents to student information. DISE[13] in India collects information from schools for use at the district and village level, as well as for national level decision-making purposes: it provides all student related information on a website that provides disaggregated data by school, district, state and national levels.[14] Kenya has initiated the use of an SMS-based online results management information system which enables students to query the database by SMS for their examination results. Similar systems also have been introduced in other African countries, such as Mauritius, Botswana and Swaziland.[15] –Such systematic and focused information on school performance can help both the national level purposes and the local community level needs. Similar examples can be cited from other parts of the world, such as the use of district plans, school inspection reports and school plans for monitoring which have been successfully adapted to suit local contexts.

School Management Committees (SMC) and Parent Teacher Associations (PTA) have gained more importance as supporting parts of the decentralization process and have helped the authorities and the community play a greater role in monitoring the performance of schools, as seen in the case of African countries, including Ghana, Madagascar, Niger, Senegal, Sierra Leone and Uganda.[16]

Examples from around the world have shown that decentralization of M&E in education has met with positive results,[17] particularly when the process has been inclusive and participatory. Providing an opportunity for community participation, it empowers communities to be move involved leading toward greater accountability and better resource allocation as well as ensuring the quality of education their children receiving. Countries such as Chile, Uganda and Cote d'Ivoire fall under this category (Katsiaouni 2003).[18] Winkler and Gershberg (2000) conducted research in several countries which shows that positive outcomes are associated with increased local autonomy. Other studies have also found that increasing community participation and, in particular, parent participation in schools has led to significantly lower rates of student and teacher absenteeism, for example in El Salvador (Jimenez and Sawada 1999).[19] Further studies have also shown that decentralization has had a positive impact on students' test scores as observed in Argentina (Galiani and Schargrodsky 2001;[20] Eskeland and Filmer 2002);[21] and that decentralized management of schools has led to improved achievement scores, for example in Nicaragua (King and Ozler 1998).[22]

3.1.2. The weakness of coordination efforts remains a critical issue

Handling the challenges of vertical coordination in response to decentralization efforts

[13] http://www.dise.in/
[14] UNESCO et al. 2015. Comparative Review of Policies and Practices on M&E of Education Systems- Regional reports - Arab, Asia Pacific, Latin America and Africa (working drafts).
[15] https://edutechdebate.org/education-management-information-systems/emis-opportunities-and-challenges-for-mobile-data-collection-and-dissemination/
[16] Antonowicz. L., Lesné. F. et al. 2010. Africa Education watch: Good Governance Lessons for Primary Education, Transparency International, Berlin.
[17] Winkler, Donald, and Alec Ian Gershberg. 2000. "Education Decentralization in Latin America: The Effects on the Quality of Schooling." LCSHD Paper Series No. 59, World Bank, Washington, DC.
[18] Katsiaouni, Olympios. 2003. "Decentralization and Poverty Reduction: Does it Work?" Paper presented at the Fifth Global Forum on Reinventing Government, Mexico City, November 3–7.
[19] Jiminez, E., and Y. Sawada. 1999. "Do Community- Managed Schools Work? An Evaluation of El Salvador's EDUCO Program." *World Bank Economic Review* 13 (3): 415–41.
[20] Galiani, Sebastián, and Ernesto Schargrodsky. 2001."Evaluating the Impact of School Decentralization on Education Quality." http://www.utdt.edu/Upload/_115332118904928800.pdf
[21] Eskeland, G., and D. Filmer. 2002. "Autonomy, Participation, and Learning in Argentine Schools: Findings and Their Implications for Decentralization." Policy Research Working Paper 2766, World Bank, Washington, DC.
[22] King, E., and B. Ozler. 1998. "What's Decentralization Got to Do with Learning? The Case of Nicaragua's School Autonomy Reform." Working Paper, World Bank, Washington, DC.

This shift towards more decentralized nature of M&E has not always been transformed smoothly but with several challenges. As many countries have transferred this responsibility away from the central government, as stated in the EFA GMR (2009)[23], "vertical" coordination remains one of the key challenges to them. This is so primarily because the transfer of responsibility from the centre to the lower levels within ministries has not been complete. It is noted that in primary education most central governments, such as Cambodia, China, Indonesia, the Philippines and Thailand, transfer authority in some areas but continue to play a significant role in others (GMR, 2015).[24] This means that a fully functional monitoring at lower levels becomes a challenge with partial monitoring control still remaining with the top level, thus affecting coordination at all levels of the sector.

Furthermore, to become an effective decentralized system coordination mechanisms among all data producers and users are required. Some African countries, such as Benin, Chad, Rwanda and Kenya, who have gone for decentralization of the education sector, face challenges in ensuring that vertical coordination functions effectively and efficiently at all levels, especially at the district and school levels.[25]. In addition, all stakeholders must be fully aware of the M&E process. In Nepal, staff, especially in the districts and schools responsible for entering data, are not well informed regarding the purpose of the data collection or the results of such data in the M&E process.

Promising reforms to improve vertical and horizontal coordination

Analysis of the M&E systems in some countries like Brazil, Chile, Colombia, South Korea, Hong Kong (SAR China) and Malaysia[26] points to some critical benefits of what happens when an M&E system becomes holistic from a programme level monitoring perspective. The various components of an M&E system, such as EMIS, TMIS etc., tend to be coordinated more effectively, as in the case of Brazil and Chile. The advantage of all the components functioning and inter-communicating well under the one umbrella of M&E is that it helps to introduce common standards and classification systems using uniform coding for better monitoring. This also reduces duplication of the process of collecting information and is more cost effective. Moreover, the availability of an M&E framework as part of national education sector plan helps to connect various components of M&E under a single framework, thus making the M&E system more efficient and effective. Countries, for example, Lebanon and Palestine, have such a national framework as part of the education sector plan.

In order to meet these challenges, the education sector may need to study other sectors which may be doing this better. Ministries of Health and Agriculture are good examples, in most instances, of having effective coordination both vertically and horizontally. For instance, the Ministries of Health in many developing countries, such as South Africa,[27] Kenya[28] and Rwanda[29] have set up extensive mechanisms for inter-sectoral and vertical coordination and monitoring of the many different projects and programmes for monitoring HIV and AIDS, with special tools for measuring the effectiveness of public investments in the sector. In contrast, MOEs in many countries tend to work

[23] UNESCO. 2009. EFA Global Monitoring Report 2009: Overcoming Inequality: why governance matters. Paris, UNESCO.
[24] UNESCO. 2015. EFA Global Monitoring Report 2015: Education for All 2000-2015 Achievements and Challenges. Paris, UNESCO.
[25] For more discussion on the decentralization in Africa, see Channa, A. 2014. Decentralization and the quality of education. Background paper for EFA Global Monitoring Report 2015.
[26] UNESCO et al. 2015. Comparative Review of Policies and Practices on M&E of Education Systems- Regional reports - Asia Pacific, Latin America (working drafts).
[27] Omokhoa Adedayo Adeleye and Antoinette Ngozi Ofili. 2010. Strengthening Intersectoral Collaboration for Primary Health Care in Developing Countries: Can the Health Sector Play Broader Roles? *Journal of Environmental and Public Health, Volume 2010*.
[28] DANIDA. 2012. Kenya Health Sector Support Programme HSPS Phase III (2012-2016), Programme Document.
[29] Government of Rwanda. 2012. Third Health Sector Strategic Plan July 2012- June, 2018; Ministry of Health, Rwanda.

independently even in cross-cutting areas such as Early Childhood Education, where health, nutrition and education are the three critical inputs needed for every child.

3.1.3. The focus of M&E systems has been shifting from compliance to performance, shedding light on student learning outcomes

An increasing focus on performance to help meeting bugdet constraints and enhance government accountability

Due to major international efforts to persuade governments to improve the quality of education, significant changes have taken place in the last few decades in the basic understanding of the purpose of education as well as in its monitoring.

M&E in its initial stage is mostly about compliance and providing basic information demanded by authorities at higher levels of government. Compliance monitoring is the oldest bureaucratic type of monitoring. Its primary goal is to make sure that schools comply with predetermined norms fixed by laws and administrative rules and regulations.[30] Monitoring at this stage is more an 'input'-driven approach looking at quantifiable inputs of the education process. It is about a predetermined set of quantitative indicators and a checklist against which the performance of the school is monitored and measured. The exercise is often carried out mainly for the purpose of reporting to higher authorities at the national level and for the inspection of schools.

Together with the advancement in the concept and practices of education planning, the focus is now on the importance of the allocation and utilization of resources in terms of efficiency, effectiveness and impact. The growing demand for better provision of quality education and accountability, has redefined the purpose of 'M&E', shifting more towards outcomes and impact than access and inputs. This is partly due to various international efforts, such as the Paris Declaration which focused on aid-effectiveness and accountability[31] and fostered performance results-based M&E.[32] They have resulted in the gradually changing of context and content of M&E toward transformative focus from a "Did they do it?" approach, to a "So what?" approach.[33] In other words, this shift is about moving beyond the extent of investment made and towards achieving the intended results and the impact envisaged initially for an effective M&E. This shift towards 'outcomes' and 'impact' has helped countries to monitor and evaluate the provision of education quality more effectively. Particularly in the context of economies with scarce resources and competing demands, investment priorities need to be guided by their comparative impact potentials for policies. Therefore, the M&E system must collect all the relevant information needed for both policy formulation and for budget preparation. Key macroeconomic policymakers, i.e. ministries of finance and planning, are increasingly focusing on the accountability factor, that is, on the quality and effectiveness of public spending in the expectation of better outcomes and impact of such public investments. For effective results-based monitoring and local level planning, comprehensive school and learner information, including student outcomes, is needed. Information on outcomes and impact of education on learners provides a clearer picture of the value of investments made and on the impact on policy decisions.

[30] Richards, C.E. 1988. "A Typology of Educational Monitoring Systems". *Educational Evaluation and Policy Analysis. Vol. 10 (2*).
[31] For further discussion on the Aid Effectiveness and Accountability aspects of the Paris Declaration, See OECD: 2008. "Paris Declaration on Aid Effectiveness (2005) and Accra Agenda for Action (2008)", pp.1-2, p.8, OECD, Paris.
[32] For critical review on the Aid effectiveness of Paris Declaration see Jonathan Glennie's article in The Guardian (Nov. 2011), http://www.theguardian.com/global-development/poverty-matters/2011/nov/18/paris-declaration-aid-effectiveness-necessary
[33] Kusek and Hall. 2004. Ten Steps to a Results-Based Monitoring and Evaluation System, World Bank, Washington DC.

However, such a shift appears to be uneven among different countries depending on the availability of necessary resources, political commitment, infrastructure and the capacity among the personnel for implementing performance-based M&E. Many countries of South-East Asia, South Asia and the politically stable/fast growing nations of Africa along with many Latin American countries, can be cited as having achieved the shift. In Latin America, for instance, the current movement to develop M&E systems emerged out of a desire for greater transparency and as a way to measure performance in the public sector.[34]

Student learning outcomes, an area of growing concern at the local, the national and the international levels

Against this context, decision-makers have begun to attach increasing importance to the development of a coherent system for monitoring and evaluating educational achievement, especially student learning outcomes.

There are several reasons for this increasing importance of student learning outcomes particularly in the developing world where learning assessments are relatively new. The most prominent argument would be a growing concern that many children do not acquire the necessary skills expected of them at any given age. Student assessments are also gaining importance due to the demand for more information on student performance by various stakeholders. Many countries are interested in using, for example, the findings of assessments to maintain and improve the quality of their education systems (OECD: 2004).[35] Furthermore, decentralization reforms have granted schools and local communities greater autonomy, thus requiring more transparency on performance and strong accountability mechanisms.

As a result, many countries have set up national institutes (NIER- Japan, KICE- South Korea, NAEP- USA, NIE- Singapore, and South Korea, and ICFES in Colombia) or dedicated separate units (Rwanda and Zanzibar) within the Ministry of Education, which are responsible for conducting regular national assessments. Furthermore, as illustrated in GMR 2015, the number of countries taking up large-scale international student assessments such as PISA, TIMSS, SACMEQ has grown from four in 1990 to over one hundred by 2013, and this number continues to increase. International assessments help countries to understand how their students are performing in comparison with students in other countries. International assessments also help build capacity in the countries through the assessment process, test development, analysis and drafting of technical reports. SACMEQ, for example, has helped countries such as Kenya,[36] Tanzania[37] (mainland and Zanzibar[38]) to strengthen the capacities of staff involved in conducting national assessment. Further, such international assessments tend to attract more political and media attention than national studies. Several countries in Africa, the Arab region, Asia-Pacific and Latin America have realized the value of conducting national assessments, as well as of participating in international assessments.

However, there are still other related aspects in a typical education process that need greater attention, particularly those relating to the 'teaching-learning' process. The monitoring of 'process' issues such as 'school inspection', 'teacher appraisals', 'quality of teaching-learning process', etc., are still weak in many countries, including those with well-developed M&E

[34] Elacqua and Alves (2015) "M&E in Latin America, Regional Report".
[35] OECD. 2004. What Makes School Systems Perform?: Seeing School Systems through the prism of PISA. Paris.
[36] http://www.knec.ac.ke/main/index.php?option=com_phocadownload&view=category&id=66:sacmeq-iii-report-highlights
[37] http://www.epdc.org/sites/default/files/documents/Tanzania_sacmeq.pdf
[38] Ministry of Education, Culture, and Sports. 2005. The SACMEQ II Project in Zanzibar, SACMEQ Harare, Zimbabwe.

systems such as India, Malaysia, Kenya and Chile.[39] One of the main reasons for this is the 'qualitative dimension' of such processes or sub-processes. Most EMIS systems and other information systems are built only to handle quantitative information with very little attention paid to the collection and use of qualitative information. Another reason for this weakness is the lack of well-developed methodologies to monitor such "processes' and the emerging aspects of education as, for example, in countries such as Syria, Yemen, Libya, Tunisia and Egypt which are affected by continuous or new conflicts of various socio-political and cultural causes in the Arab region.[40]

3.2 What are the decisive factors in building effective and efficient M&E systems?

A good M&E system is more than a mere statistical task or an external obligation. For the M&E system to be effective and efficient, it must be planned properly, managed efficiently and provided with adequate resources, making it sustainable.

Effective policy-making in education requires information on whether governments are doing things right and whether the desired results are being achieved. Strong M&E systems provide the means to compile and integrate all the necessary information into the policy cycle, thus providing the basis for enabling sound governance and accountability in education policies.

Although these aspects are interlinked, it is difficult to establish the causal relationships between the various factors that contribute to the efficient performance of the system. Similarly, the exact nature of the contribution of each of these factors towards the performance parameters (effectiveness, efficiency and sustainability) is difficult to establish. The findings in this section, which are distilled from the four regional reports and other secondary research, reflect the factors that affect the way that the M&E system is able to function, and the other issues that contribute to the proper functioning of an M&E system in the education sector.

3.2.1. Using technology to develop comprehensive M&E systems

There has been a growing demand for data comprehensive enough to meet the demands of users such as decision-makers, planners, and the community. Such data need to include details of disaggregation at various levels as also reliable data on key indicators and other qualitative determinants. Thanks to advanced technology, such a large volume of data can be made available. Technological advancements also have helped in the production of more data at the school level. Again, such data includes, for example, not only the data sources within MOE, such as EMIS, but also from other sources, such as large-sized household surveys, socio-economic surveys and special studies.

The key role of technology in monitoring and evaluation of education has been widely recognized by policy makers, planners, donors and all stakeholders. When put to good use, technology can greatly reduce the time and administrative costs associated with M&E. Technology also improves the quality of data and reduces the time taken for collection, processing and analysis. There has been a

[39] UNESCO et al. 2015. Comparative Review of Policies and Practices on M&E of Education Systems- Regional reports - Arab, Asia-Pacific, Latin America and Africa (working drafts).
[40] UNESCO, 2015. (Draft March version). Comparative Review of Policies and Practices on M&E of education Systems.

significant acceleration in the use of ICTs for education since the World Summit on Information Society (WSIS) 2003.[41] Countries have invested heavily in technology to provide access to education, especially helping communities in hard to reach places to gain access through the use of technology, including the creation of e-learning platforms and the introduction of mobile learning technologies.[42] If ICTs are to become effective and integral tools in education, and if accountability is to be demonstrated to donors and stakeholders, monitoring and evaluation must be a priority area of focus of such technology use.

By way of example, Brazil is reported as having one of most complete and complex M&E systems in the world (Vaillant, 2015). The system is used to formulate, implement and evaluate policies and programs in the three tiers of government. Technical changes have been made over time to improve the M&E system in education in order to meet not only the political needs for the implementation of policy decisions and programs, but also to promote greater integration of the different components of the M&E system. Another example is that of Bhutan, where the National Education Assessment (NEA) as a system-wide assessment program is designed to investigate and monitor the 'health' of the education system. The main purposes are to provide policy-makers with information to monitor standards over time and to compare its performance with the international standards, to monitor the impact of particular programmes, and to make decisions about resource allocation, schools and teachers with information about whole school, class and individual pupil performance. The extensive data collected under the 'Education Reform for the Knowledge Economy Program (ERfKE)' may be cited as another example. The programme is responsible for collecting and processing education data (Educational Management Information System EMIS), for analysis and interpretation of education data, in accordance with the Strategic Plan of the Ministry (evaluate the effectiveness of the education system and its internal efficiency), for financial planning, and strategic planning. Similarly, South African Schools Administration Management System (SAM) has been introduced and is expected to eventually replace data collection through surveys. It is an integrated electronic application that is supplied free to schools and allows the capture of various types of school information such as parent and learner profiles and educator information as well timetables, finance, governance, assets and Learning and Teaching Materials (LTM).

In addition, availability of individual student level information in a timely fashion helps tracking student level performance, as well as helps in allocating resources efficiently. Countries such as Nepal, Brazil, Peru and South Korea,[43] are able to track student progress through the collection of student level information. Student tracking at the district/county level sometimes gets more attention through a system-wide approach to ensure that information on every student gets collected. Cambodia and two states in India provide another typical example of countries where census-based systems are being gradually replaced and/or integrated with operational systems using information technology.

3.2.2. Addressing the potential risks of generating important volume of data

The generation of such large volumes of data, though useful from the angle of data availability, also poses certain challenges relating to the handling of 'big data'. While technology has helped countries

[41] *WSIS Stocktaking: Success Stories 2012*, 2013. WSIS Project Prizes 2012, World Summit on the Information Society, International Telecommunications Union, Geneva.
[42] For success stories of use of ICTs in Education see *WSIS Stocktaking: Success Stories 2013*, WSIS Project Prizes 2013, World Summit on the Information Society, International Telecommunications Union, Geneva.
[43] UNESCO et al, 2015. Comparative Review of Policies and Practices on M&E of Education Systems- Regional reports - Arab, Asia Pacific, Latin America and Africa (working drafts).

to improve their existing databases and data capturing processes using digital media, many countries, for example, Jordan, Palestine and Lebanon[44] and Nepal and Cambodia have several databases, but they are not well-integrated for exchange of data. Some of these countries still upload data manually. In Asia, while some countries, like Myanmar, Nepal, and Bangladesh face the challenge of insufficient capacities to utilize the technology for M&E at all levels, some countries, such as India and Malaysia, suffer from over-utilization of technology. In some of the stronger economies where IT has been on the rise, there is a tendency to have sophisticated technology that is not fully utilized.

The increasing volume o*f* data collected may cast a burden on the data providers at the lower end. Often demand for more information results in schools, especially the teachers, being tasked with collecting several types of information, filling in survey forms and administering assessment tests, etc. This considerably affects their teaching schedule and affects the quality of teaching. Further, this can have more serious consequences on the provision of education in poorer countries, especially in the sub-Saharan region of Africa, for example, which has an acute shortage of teachers.

Furthermore, schools must ensure privacy and protect the rights of the respondents. The moment a school collects information about a student, or a student's family, there may be issues about the way the information is collected, how it is stored, how it is used and how and to whom it is disclosed and disseminated. An efficient information system must have strict measures that would prevent any possible misuse of student information. Protecting the privacy of students has been given great importance in most developed countries, such as the United States through Family Educational Rights & Privacy Act (FERPA) and New Zealand through its Privacy Act 1993. Such laws are mostly absent or weak in many developing countries, a fact which raises questions about the protection of such student data from the possibility of misuse.

3.2.3. Building strong internal capacity at all levels

Building strong organizational and technical capacity at all levels of M&E system and improving career opportunities

The success of the development of M&E systems, not the least through the use of technology, depends on the ability of the system to utilize the tools by having well-trained personnel to handle it for M&E purposes. The capacity needs range from analysis and policy formulation, data management, upgrading the skills of staff doing work that demands higher levels of IT skills, and proficiency in handling a large mass of data, to providing needed training for statistical or database management. The capacity to analyze and interpret data will have to focus on the needs of different users. The tools for data collection need to be carefully designed so that they do not miss out on any essential information and, at the same time, not include superfluous or ambiguous information. A good matching of capacity for designing the tools and the capacity of analyzing and interpreting such data would be called for in order to achieve desired ends. In the absence of such a matching, the data system may run the risk of ending up with the collection of a large mass of unutilized data, while at the same there may still be data gaps on certain specific demands of specific users. The proper storage and retrieval of such data is another challenge to be addressed by both technology and the capacity matching referred to above.

[44] UNESCO. 2014. Comparative Review of Policies and Practices on M&E of Education Systems: Arab States Report (draft version, September).

It is increasingly acknowledged that more often than not it is the organizational and institutional dimensions, rather than M&E technicalities, that are the main challenges faced by many countries' M&E (Bedi et al., 2006;[45] Wood et al. 2011).[46] Addressing the gaps in technical capacity of an M&E system requires an approach that would balance the development of individual skills by strengthening the organizational structure supportive of, and responsive to, the context in which M&E takes place. Newly trained staff must be supported by their organizations to translate their new skills effectively into sound practices in data collection and use. Training programmes should also reinforce the importance of M&E practices laying emphasis on the use of M&E for decision-making for programme improvement rather than using data collection for reporting purposes alone. One of the crucial elements in this regard is the establishment of an appropriate institutional structure providing support and having good coordination among the different personnel/units involved in the production of data, analyses of data and use of evidence. To do this, M&E personnel need a set of specialized skills and knowledge. However, in practice, the needed technical capacity and the ability of the M&E personnel to perform such wide ranging tasks seldom gets much attention.

Countries, generally, have taken the initiative to focus resources on assessing capacity and performance of their M&E system and have taken steps to develop a systematic approach to capacity-building. Since the needs are vast and varied, capacity builders must set priorities based on immediate as well as longer term needs. An important policy lesson is that performance objectives are useful for guiding capacity-building and system strengthening exercises and would help avoid ad-hoc acceptance of assistance as it is offered. Even highly evolved M&E systems, as in the countries of Latin America, tend to have technically sound personnel, but may fall short in other crucial areas such as getting poor pay packages, lack of adequate support staff, lack of opportunities for continuous capacity development and lack of opportunities for career development within the MOE. There is thus a clear need for establishing institutional support systems to sustain the technical capcities acquired by M&E staff.

The effectiveness of an M&E system can be judged by the demand for data within and outside the ministry, the quality and reliability of evidence produced and the extent evidence is used for planning and implementation purposes. The demand for evidence can be generated only when there is systematic, timely and reliable availability of data for all stakeholders. Ineffective use of data can be attributed to 1) lack of easy access to data and 2) lack of capacity of the user to use the data efficiently and effectively. Sensitization and advocacy for effective ways of using data by various users is often the prescribed method for achieving this, but most countries do not have systematic efforts to address this need. For example, media training on presenting data in the right manner is often accorded a low priority by many governments. This may result in the risk of elaborate monitoring and evaluation reports gathering dust on the shelf. Traditional M&E systems typically involve developing and monitoring of key education indicators. However, many countries are moving towards a more inclusive M&E system which takes into account the concerns of all stakeholders, that is, those on both the demand and the supply sides. More active participation of the target beneficiaries/communities and NGOs is expected to improve the accountability of the governments and the quality of monitoring. It is also open to providing information on various aspects of the education process and not restricted to a narrow approach of giving information on only selected indicators.

[45] Bedi, T., Coudouel, A., Cox, M., Goldstein, M., and Thornton, N. 2006. *Beyond the Numbers. Understanding the Institutions for Monitoring Poverty Reduction Strategies*. Washington, DC: World Bank.

[46] Wood, B., Betts, J., Etta, F., Gayfer, J., Kabell, D., Ngwira, N., Sagasti, F. and Samaranayake, M. 2011. *The Evaluation of the Paris Declaration* (Final Report). Copenhagen: Danish Institute for International Studies.

Promoting the effective use of evidence collected by M&E systems within the media community and civil society

A learning point is that the effective use of information, even when it is available, depends on the capacity of the users. It is also dependent on the manner in which the information is made available to the user. Attractive packaging and appealing presentation of data are more likely to captivate the attention of the target audience and motivate their quick response to the problems addressed. Systematic advocacy and providing opportunities to sensitize different stakeholders on the use of information from M&E are not common approaches in most countries. Only through systematic efforts can the social accountability factor be improved and made into an operational response mechanism.

3.2.4. Ensuring political commitment and leadership to establish institutional frameworks and secure funding for the development of sustainable M&E systems

There is undeniable need for high-level commitment and political will for making M&E systems work better and deliver up to expectation. Such commitment would lead to the provision of sufficient resources needed for developing the necessary infrastructure and the human resources to develop efficient, effective and sustainable M&E systems have allotted.

Firstly, there is a need for governments to consider financial sustainability and have proper plans in place for developing sustainable M&E systems. As noted by the Asia-Pacific review of M&E systems, (UNESCO Bangkok, 2015), the initial development of M&E systems in many Asia-Pacific countries were funded by international organizations including UNESCO. Now there is a need for more internal funding by the countries concerned in order to sustain the systems that were created. Country financial plans should factor in all the costs needed to both build and maintain the system, as well as other operational costs. For instance, in the Arab region, countries, such as Jordan, Lebanon and Palestine (UNESCO, 2014)[47] have considered the development of their M&E systems as part of a strong national commitment to attaining national education goals. In contrast, countries like South Sudan and Mauritania in Africa have built their M&E systems with donor funding including technical assistance.

Secondly, strong legal frameworks are essential to support the operationalization of effective M&E systems and ensure better accountability and transparency with regard to the expenditure of funds allocated. It will also ensure the systematic availability of reliable evidence to measure the impact of policies and programmes, and the effectiveness of those expenditures.

The growing demand for better accountability of public expenditure has resulted in the realization of the importance of M&E in bringing to light the impact of programmes. This requires that line agencies and ministries regularly operate their very own MIS. It further requires that the Ministry of Finance and the Planning Commission hold the line ministries accountable not merely for the timely spending of the money allotted on the relevant programmes but also for ensuring the achievement of the desired outcomes. Again, the third requirement is that there should be a system of performance management, located preferably at a high level in government. This in turn means that the whole system needs to be supported by statistical bodies that are responsible for the timely collection of quality and reliable data that is need based and, if need be, goes beyond what is

[47] UNESCO. 2014. Comparative Review of Policies and Practices on M&E of Education Systems, Arab States Report (draft).

normally collected in a conventional MIS. Countries without such accountability factor built into their M&E systems may end up with avoidable wastage of their scarce resources.

Thirdly, many countries seem to have a National Strategic Framework and a National Coordinating Body but they tend to lack a well-designed National M&E Framework. This is because the entities responsible for implementing M&E systems are relatively new and have fragile institutional structures and weak platforms from which to advocate for effective M&E practices. As a result, many governments have taken initiatives to build a more firmly institutionalized national setting conducive to continuous results-based M&E activities tied to planning, budget allocations and decision-making for implementation and accountability.

The development of an M&E system in South Africa is a good example to demonstrate the above point. Historically, until 2000, there was no centrally driven M&E system. After 2000, there was a growing interest in M&E. As a result, the Presidency became interested in the role of M&E. Soon thereafter, in 2005, came cabinet approval for the development of an M&E system.[48] A functional M&E system was planned for each department, including education. In 2007, a policy framework was published to guide the M&E system, which included the need for frameworks for programme performance information and for statistical data quality and evaluation. This in turn helped to strengthen the links between the Presidency, the Treasury, and the national statistics agency. As a result, policy frameworks were developed for these elements between 2007 and 2011 (Engela and Ajam, 2010).[49]

Similar examples can be cited from countries like Benin, where an office for the Evaluation of Public Policy has been set up since 2007 in the Office of the Prime Minister with a clear mandate to evaluate all public policies. The national M&E system is now organized around a chain of parties which carry out planning, programming, budgeting (PPBS), and monitoring and evaluation (Clear, 2013).[50] Similarly, in Kenya,[51] a Monitoring and Evaluation unit was set up in the Ministry of Planning in 2008. One of the main tasks of this unit is to prepare all monitoring products, particularly the Annual Progress Reports on the National Medium Term Plan related to Kenya Vision 2030.

Similar national M&E units have been set up in countries of other regions, including India, Sri Lanka,[52] Nepal, Malaysia, Palestine, Jordan, Brazil, Papua New Guinea,[53] etc. However, there are also countries in the developing world which are yet to have a fully functional and operational national level M&E unit. For example, in several countries of the Caribbean region, and in countries in conflict areas, such as Somalia, Central African Republic and Afghanistan, there is lack of well-developed national M&E systems.

3.3 What are the Interactions between M&E Systems and Policies?

The value of evidence-based policy-making in education has been well documented and argued widely as discussed in the preceding sections. The true impact of policies can be realized only

[48] National Treasury. 2007. "Framework for Programme Performance Information." Pretoria, South Africa.
[49] Engela, R., and T. Ajam. 2010. "Implementing a Government- Wide Monitoring and Evaluation System in South Africa." ECD Working Paper Series No. 21, World Bank, Washington, DC.
[50] CLEAR, 2013. African Monitoring and Evaluation Systems Workshop Report, University of Witwatersrand, Johannesburg.
[51] Republic of Kenya. 2012. A Policy Framework for Action: Aligning Education and Training to the Constitution of Kenya and Kenya Vision 2030 and beyond, Nairobi.
[52] Sivagnanasothy, V. No date. Monitoring and Evaluation System in Sri Lanka: Experiences, Challenges and the Way Forward, Ministry of Plan Implementation, Sri Lanka.
[53] Government of Papua New Guinea. 2008. Papua New Guinea Vision 2050, National Strategic Planning Taskforce, PNG.

through systematic monitoring of the implementation of the policy and measurement of its impact. A good M&E system can help policy makers and planners articulate better evidence-driven policies that take into account both the political perspective and the user perspective.

This section presents the three main findings from the regional reviews:

1. M&E systems continue to lay more emphasis on gathering voluminous data but with low utilization of evidence for policy formulations and planning process.
2. Despite increasing levels of participation of local stakeholders in the provision of education, their active participation in monitoring is not apparent.
3. Local communities are often unlikely to use evidence from evaluations.

i. M&E systems continue to lay more emphasis on gathering voluminous data but with low utilization of evidence for policy formulation and planning process

As discussed in the earlier section, there is abundant data that is being produced by various M&E systems through school census, school assessments, and other M&E initiatives. These days, many countries have made their statistical reports and school database online. In Palestine, all quantitative data for various indicators are compiled through existing databases using computerized matrix linked with the computerized financial system. These computerized calculation mechanisms are used in transforming qualitative results to quantitative measures. The monitoring mechanisms for the school information system are computerized and placed on the web page to link with schools on an ongoing basis via the Internet. The publication of the reports on the web page of the ministry consolidates public awareness. Chile is another example of country which publishes its education data on its website. In Colombia, school level and aggregate SABER test results are widely disseminated and available to download on ICFES's web site.

Yet, although availability of such comprehensive information could help policy makers to identify areas that need more attention, such as drop-outs, achievements, accessibility in remote areas, quality of teaching etc. but often they are not being used for the policy-making process, as is the case in Ethiopia, Lebanon, Nepal and Bolivia.[54] Utilization of evidence is dependent on the way the information is disseminated. It may be that the information that is produced may not cater to specific user demand or for a specific audience. For example, in Colombia, the information disseminated does not cater to the specific needs of local policymakers, principals, teachers and parents. It caters more to national policymakers and the press. Another example is Myanmar, where it is reported that schools and teachers are not being informed on what the data reports, and that the analyses are not being used to impact any improvement in the curriculum, education policy, or planning. Similarly, in Nepa, while there is a standard and well-developed school record keeping system, it is yet to cater to the needs of schools in areas of management, decision-making, and enhancement of teaching-learning process to improve quality of education. In the case of Egypt, it has been reported in the case study that reports produced by the M&E systems are either routinely generated regardless of demand or produced on ad hoc basis. According to the Ethiopia country report, the EMIS database needs to be revised to include comprehensive data on human resources, information on state of infrastructure and assets. It is also weak in catering to performance measurement data at district and school levels as also with regard to information on financial management.

[54] UNESCO et al. 2015. Comparative Review of Policies and Practices on M&E of Education Systems- Regional reports - Asia Pacific, Latin America (working drafts).

In addition, dissemination mechanisms to sub-national level are often poor in many countries. For example, statistical reports may be too technical with many aggregated tables, or may be disaggregated only at the provincial/district level and not further down. The national data may not be of much help when it comes to some micro sub-provincial or district level in some remote inaccessible area where such rates are not known. It is not uncommon to come across situations where certain macro level data look quite fair but not so at particular micro levels, for example, enrolment rates or drop-out rates. Therefore, culling out and disseminating relevant data at such levels, and in a timely manner, gains importance for local level programme planning and implementation. In addition, most publications (especially in Africa) are in English or French, and therefore not many at the local levels are able to use them.

Furthermore, the perceived unreliability of data would be another reason for little use of such data for informed policy formulation and planning. For example, the Regional Review of M&E practices in the Asia-Pacific region mentions that there are low levels of trust in the quality of data produced in many countries. While some countries produce abundant data, the lack of trust in the quality of the data and lack of necessary capacity among the lower levels of education systems, such as in Myanmar and Nepal, can also lead to poor utilization of data for policy-making (UNESCO Bangkok, 2015).[55]

Another factor related to the poor use of data for evidence policy making is the lack of culture and technical capacity to fully harness M&E systems as pointed out in the Regional Review of M&E systems in Latin America (Elacqua and Alves, 2015). The review points out that many countries do generate abundant data, but not much of it is found to be informing policy-making. This is also the case in the Arab region with many countries, such as Lebanon, Jordan, Egypt and Palestine producing substantial data with no proper measures to ensure evidence-based policy-making in practice. The regional reports of M&E systems in the Arab region and in Africa also mention that there is low utilization of data for policy-making, and even when it does, it is influenced by political decisions (UNESCO, 2014,[56] UNESCO, 2014[57]). At the national level, most policy makers are often too busy to read and thoroughly understand the implications for policy of a statistical report. Again, in some cases, lack of capacity and inclination may be the cause. In such circumstances, they tend to depend on their own intuition gained from long years of experience, from the socio-political context they are familiar with, and from short briefs prepared for them that tend to gloss over finer details and disparities that exist at the local level. The end result is that most of these local level problems fail to attract the attention of top policy makers and hence get neglected. At sub-national levels, even though the functionaries may not have such time constraints as compared to the top-level functionaries, they still may lack adequate capacity in data appreciation, resulting in monitoring alerts not getting acted upon properly. The situation at the micro level is no better given the functionaries at that level not even knowing why they are collecting information and not knowing what the data mean at their levels.

The normal benchmark for the effectiveness of an M&E system is the extent to which the information produced is utilized. Effectiveness is also linked with its sustainability. In short, "for evaluations to be useful, they must be used" (OECD-DAC, 1991). When evidence is well-utilized it improves the overall efficiency of the M&E system (e.g. Brazil, Chile and Republic of South Korea).[58]

[55] UNESCO Bangkok, EPR Unit. 2015. "Practices on Monitoring and Evaluation of Education Systems, UNESCO, Bangkok.
[56] UNESCO. 2014. Comparative Review of Policies and Practices on M&E of Education Systems: Arab States Report (draft version, September).
[57] UNESCO.2015. "Practices on Monitoring and Evaluation of Education Systems: Africa Regional Synthesis Report", Addis Ababa.
[58] Op cit.

Despite increasing levels of participation of local stakeholders in the provision of education, their active participation in monitoring is not apparent

In most developing countries, responsibility for providing basic education has been with the national governments. However, a result of the growing number of countries that have gone in for decentralization of their education system, transferring of responsibilities to the sub-national level has taken various forms including devolving management responsibilities to lower levels of government. In many countries, the civil society plays the role of provider of education to the socially marginalized and the poor, and in some other cases they constitute the only source of education, such as in the refugee camps in Kenya[59], or providing essential services including education to remote indigenous population in Nepal[60] and the Philippines.[61] Communities get also involved in providing supplementary resources to the education system as for example, in Bhutan, many primary schools are run by the community[62], and in Cambodia the school system heavily relies on inputs from the community[63]. There are similar cases of the private sector getting involved in the provision of education, such as Azim Premji Foundation in India, and Agha Khan Foundation (AKF) working in several countries of Africa and Asia.

However, unlike other social development sectors such as poverty reduction, agriculture, health, and community empowerment, the quantum and quality of involvement of stakeholders, such as NGOs, FBOs and the communities, in M&E of education appears to be very negligible. Although many countries in Latin America, Africa, Asia and the Pacific also have apex NGO coordinating bodies, which could provide a platform for better coordination of monitoring progress among NGOs and between NGOs, governments and donor agencies, however, wider and more systematic involvement of NGOs, and more broadly the community, in monitoring activities by governments is found to be low in the education sector. In many cases, the presence of apex NGO coordinating bodies in many countries occasionally triggers their involvement by the government in the planning or the dissemination stages of a programme, but this can by no means be considered as 'being involved' in the process of monitoring. For example, the South Africa report states that although civil society has influence it has tended to be largely peripheral to the activities of the state. In Chile, voluntary services are limited to establishing and distributing awards for excellence to teachers, but nothing more than that.

Another observation in this regard is that developing the role of community in monitoring has remained largely an idea on paper and has not been translated into reality. Even where attempts have been made to operationalize this concept, they have been so routinized that at the end of it all they have remained mere ritualistic meetings for purposes of record only. Community monitoring can be effective only when the target groups are trained in the appreciation and use of data for monitoring and evaluating the performance of a school or a learning institution situated in the community. The lesson is that for doing this, the data need to be simplified and presented to the community monitoring and evaluation committees in a manner that makes sense to them and thereby may spur them to action to remedy the problem situations brought to their notice.

There are still some examples of community-led initiatives monitoring in education, such as ASER (India and Pakistan) and UWEZO (Tanzania, Kenya and Uganda) where volunteers and parents are

[59] Mackinnon, H. 2014. Education in Emergencies: The Case of Dadaab Refugee Camps, CIGI, Policy Brief, No.47. from www.cigionline.org
[60] See NEFIN at http://www.nefin.org.np/list/About-NEFIN/4/0/13
[61] See http://www.cpaphils.org/about1.php
[62] Bhutan Royal Government. 1999. Education for All: an assessment of the Progress, Ministry of Health and Education, Thimphu.
[63] Bray, M. 1999. The Private Costs of Public Schooling: parental and community financing of primary education in Cambodia. UNESCO IIEP, Paris.

involved in collecting annual student performance data and surveys at the household level. Results of such assessments are communicated to the governments, ministries, teachers and parents regarding the quality of the schools. These assessments are being used as accountability and governance mechanisms by communities and civil society organizations to raise issues of education delivery and quality (Banerjee et.al, 2010).[64] Nevertheless, the results of their surveys and studies are hardly taken into consideration in policy formulation processes.

Local communities are often unlikely to use evidence from evaluations

Increasing levels of participation by various players including the local communities in the provision of education have generated greater demand from stakeholders for more evidence to ensure greater accountability and transparency. However, the ability to effectively utilize such evidence for monitoring is hampered by several reasons:

The first reason relates to difficulties in accessing such information. In many countries there is a right of the public to obtain any information from the public domain or any information that is not classified. There are also special commissioners in some countries to ensure the provision of such information to members of the public who may want to have such information. However, it is not uncommon to see some hesitation on the part of the functionaries in charge of such information to part with the same on demand. The process of obtaining such specialized information, or information pertaining to particular micro level units, is usually desultory at best. This may discourage such seekers from further pursuing their enquiry. In addition, many countries try to restrict access to such data due to socio-political or other administrative reasons.

The second point relates to poor quality of data. In some countries, data collection mechanisms may not be reliable and often the data that is produced is not of good quality and relevance. There have been instances where the logic of causal relationships between two variables that are correlated has been found to be too weak to gain credence. Confusing formats of cross-tabulations are also not uncommon. Important local level information such as the socio-economic context of the learner are usually not covered fully in the final reporting formats. Furthermore, timeliness is also one of the quality factors to be considered. This includes timeliness in the reporting process from sub-national to national levels, and in the response mechanism from national to sub-national level. Since the time taken between the collection of data and the publication of data is usually quite long, often micro level planners and administrators at local levels never get to use the final product in a timely and hence useful manner. Ensuring such timeliness will not only involve making available suitable infrastructure and training, but will also entail some attitude-building exercises for the staff concerned, particularly at sub-national and school levels, to gain a better understanding and use of M&E.

Some sensitive issues and low priority aspects, such as refugee education (Arab and African countries), migrant populations (Asia-Pacific), prison education (Africa), and tribal education (South Asia) get less reported and are largely unaccounted for. Apprehension about perception of certain data by the public as reflecting performance in a poor light may result in a lack of trust about providing such data on the part of data providers. In some cases, where lackadaisical performance is revealed, governments may not trust the civil society and the community, in general, for fear of their using the information to create complications for the government. For this reason, there is a conventional inhibition among data providers against disclosing too much information as they fear that it may lead to complications, and sometimes to avoidable trouble with or for the government.

[64] Banerjee, A., Banerji, R., Duflo, E., Glennerster, R. and Khemani, S. 2010. Pitfalls of Participatory Programs: Evidence from a Randomized Evaluation in Education in India. American Economic Journal: Economic Policy 2010, 2:1, 1-30.

To cite an example, the advent of social media and other social networks that use electronic media has increased the pressure on governments and ministries of education to release certain data, such as exam results in a timely manner. In Africa, NGOs such as Uwezo, functioning in Tanzania, Uganda and Kenya, have made use of mobile phones to instantly release results of their student assessments to the public. As a result, the performance of students is discussed and debated widely in the public arena, thanks to mass media and social media. This has raised several questions aimed at the government regarding the outcomes of education in terms of the capacity and skill levels of students.

The last point here relates to lack of ownership of information due to lack of awareness of the importance of evidence and its potential use. Often in countries with low literacy levels, such as Niger, Afghanistan, Somalia and Bangladesh, there is less awareness about the importance of education. Again, due to cultural reasons, certain communities may ignore such evidence, like, for example, girls' education (in some countries from the Arab region, sub-Saharan Africa and South Asia), and in some cases such ignoring may also be due to the lack of certain basic infrastructure in schools, such as proper toilets for girl students. Education also may receive a low priority in the perception of certain communities that face conflict and migration. In such cases, the communities are more concerned about their survival and consider education a low priority. Low demand and lack of ownership of evidence is common in these cases as well.

SECTION IV- KEY POLICY LESSONS

4.1 Introduction

The following section lists some key policy lessons based on the regional reviews and country case studies commissioned by UNESCO, Paris. Several rounds of regional and experts meetings, literature reviews and other secondary research have also been conducted to ascertain the value of selecting these critical policy lessons for this global synthesis. The review process has considered the following issues based on which the policy list has been developed. They are:

- availability of the necessary institutional and organizational condition;
- utilization of technology;
- availability and proper utilization of resources;
- interest and commitment of the stakeholders;
- methodologies used for data collection;
- data dissemination and utilization by its intended users; and
- ways in which the system is interacting with other related M&E systems.

This list does not claim to be either definitive or exhaustive, and recognizes the fact that there is a possibility of adding other aspects to it. A closer look at this list would also reveal some overlaps which should be considered inevitable in a subject like this. M&E is not a static, one-off entity, but a dynamic process that cuts across activities undertaken by different sectors that provide education, as they normally happen in a typical educational system; from conception and formulation of an issue into a policy, designing of a programme or initiative, the process of implementing the programme or initiative, and measurement of its eventual result or outcome.

The list can also be further broken down into more lessons; but the purpose of this exercise is to synthesize some major global concerns regarding M&E in terms of policy lessons and recommendations for further actions on them. The policy lessons are broadly grouped under the following three headings:

- Promoting strong national ownership;
- Strengthening systematic coordination;
- Designing M&E as a tool for decision making at the national, subnational and school levels.

4.2 Policy Lessons

4.2.1. Promoting strong national ownership

Countries lacking strong national ownership, as well as ownership at sub-national or local levels, are unable to have sustainable M&E systems

The Paris Declaration (2005) established “country ownership” as a key principle of aid effectiveness whereby “partner countries exercise effective leadership over their development policies and strategies and co-ordinate development actions”.[65]

[65] OECD. 2011. "Aid Effectiveness 2005-10: Progress in implementing the Paris Declaration", OECD Publishing, Paris.

Strong national ownership and leadership is the most important critical factor for ensuring good development outcomes and good monitoring and evaluation systems for education. The ownership principle in the Paris Declaration states that partner (developing and transition) countries will exercise effective leadership over their development policies and strategies and co-ordinate development efforts themselves.

The principle of ownership means that countries should own and lead their own country-led national monitoring and evaluation systems. Lack of ownership can result in a weak M&E system which can affect the evidence-based policy and planning efforts in education at the national level. The role of donors and international organizations can be to provide support for sustainable national monitoring and evaluation through capacity development. However, such capacity development must be owned and internalized by the countries concerned and used to develop their own M&E systems. An M&E system is at a well-developed stage when it is independent and/or synergetic, and often has good national ownership as demonstrated in many Latin American countries, such as Brazil, Chile, Mexico and Argentina.[66] In Brazil, the M&E system is used for formulation, implementation and evaluation of policies and programmes at all levels. Also, the M&E system includes all stages of education from early childhood education to tertiary education. This is possible because of the strong national ownership and realization of the need for a well-developed and coordinated M&E system for education (Elaqua and Alves, 2015).

Another dictum of a good M&E system is that the data collected should be analyzed at levels as close to their collection point as possible. However, data collection at the sub-national level, and other micro levels, rarely get analyzed and discussed at those levels and this puts the element of ownership at great risk. This is a common scenario in countries even in an independent or synergetic stage of development. For example, countries such as India, Sri Lanka, Kenya, Tanzania (mainland), Rwanda, Jordan, Lebanon and Vietnam[67] have district level or provincial level data collection mechanisms, but the data collected is sent to the central EMIS unit without much use made of it for monitoring or planning at the district or local level. The final products that come out of EMIS, i.e. statistical reports, have very little impact at the local level. This may result in situations where the administrators, managers and teachers at sub-national levels (provincial, district or school) are often engaged in the collection of data are often not fully aware of the purpose of collecting the data, and what their possible relevance might be for them in their activities. Therefore, there is hardly any surprise when the functionaries at these levels consider such data collection as a mere routine which they have to follow just because it is demanded of them by their immediate supervisors, senior officers of the ministry or by the representatives ofa donor agency.

In sum, ownership and accountability are considered two important aspects that sustain an M&E system (Whitty, B. 2010;[68] Busia, K. 2010[69]). They can lead to developing a holistic approach to accountability which promotes better utilization of information at all levels and by all stakeholders, as demonstrated in some of the advanced M&E systems mentioned earlier in this document.

Within each country, M&E systems should be designed as to look at the specific emerging issues in education

[66] Elacqua and Alves. 2015. (draft) M&E in Education in Latin America, UNESCO.
[67] UNESCO et al. 2015. Comparative Review of Policies and Practices on M&E of Education Systems- Regional reports - Asia Pacific, Latin America (working drafts).
[68] Whitty, B. 2010. "Domestic and Mutual Accountability for Aid: Building Stronger Synergies", Interim Synthesis Paper, One World Trust for the Commonwealth Secretariat, UK.
[69] Busia, K. 2010. "Southern Perspectives on Aid and Accountability: ECA Inputs", APRM Support Section, United Nations Economic Commission for Africa, Addis Ababa.

There are structural variations between the different countries in the delivery of education services to the various target groups. Therefore, the issues of coordination of M&E systems within the contexts of such structural variations need to be addressed adopting a country-specific approach. Some examples are examined below.

In many countries, basic education, tertiary education, non-formal education, literacy and early childhood care and education are run by different ministries or departments (Kenya, Nepal, Tanzania, et al) with no proper coordination mechanism in place. In India, there is a separate Ministry of Women and Child Development in charge of running an early childhood care and education programme through its ICDS (Integrated Child Development Services) programme.[70] This situation has, in turn, resulted in the creation of several databases; sometimes more than one for each department/ministry (India and Sri Lanka). In India, the early childhood care and education programme is monitored by the MIS of the Women and Child Development Ministry, which is quite apart from the EMIS of the Department of Education, which is under the Human Resource Development Ministry.

Furthermore, several countries have been engaged in the process of conducting comprehensive national assessments of their progress towards achieving EFA goals since 2000. The country-led assessments in Asia-Pacific and Africa have revealed that not many countries in these regions have had a clear M&E plans to address many of the emerging issues that may be specific to each country. For example, peace education is a critical issue in many post-conflict countries or countries which have faced some issues related to isolated violence, such as, for instance, in Kenya, Uganda and Sri Lanka.[71] But, no clearly focused and issue-specific M&E mechanism is available to capture data on the various peace education initiatives undertaken in these countries.

In the Arab region, there are two major emerging issues that are common to many countries. The first issue is linked to ongoing or new conflicts of political, religious or ethnic nature in many countries, including Palestine, Lebanon, Iraq, Syria, Libya, Yemen, Tunisia, and Egypt and to some extent Jordan. Internal conflicts have led to the movement of populations (refugees and IDPs) which, in turn, have raised the issue of provision of education to such populations. The second emerging issue is centred on the concept known as "Arab Spring", which involves provision of social justice and youth employment. It involves significant changes to the curriculum to integrate peace education, 21st Century skills, etc. Such issues pose new challenges from the angle of monitoring which, then, raises critical issues regarding the proper designing of an M&E system that is flexible enough to integrate such dimensions (UNESCO, Arab Regional Review Report of M&E, 2014).

Good M&E systems are well equipped to report effectively on all emerging outcomes of education programmes, including its allied areas, namely, Early Childhood Care and Education; Technical and Vocational education; and Literacy and Life skills education

An important lesson to re-iterate in this context is that even though several countries have been engaged in the process of conducting comprehensive national assessments of their progress towards achieving EFA goals since 2000, the country-led assessments in Asia-Pacific and Africa have revealed that not many, if any, of the countries in these regions have had a clear M&E plan to address many of the emerging issues that may be specific to their country. For example, peace education is a critical issue in many post-conflict countries or countries which have faced some issues related to disturbing the peace and isolated violence, such as, for instance, in Kenya, Uganda, Afghanistan, Timor-Leste and Nigeria. However, no clearly focused and issue-specific M&E mechanism is available to capture data on the various peace education initiatives undertaken in the countries. Similarly, for

[70] For further information on ICDS see: http://wcd.nic.in/icds.htm
[71] National EFA Assessment Reports of Sri Lanka (2008), Kenya (2011), Uganda (2012).

HIV and AIDS education; although it has been widely discussed in many countries of the world, especially in Africa, its M&E factor is seen to be quite weak. There is no systematic integration of HIV and AIDS education data into the education database and the monitoring of programmes are largely driven by donor agencies with no clear framework or standards for M&E being developed by the governments. While some countries (South Africa, Kenya, Tanzania, Rwanda and Uganda) have made great progress in the areas of HIV and AIDS education, what one learns is that there is a general lack of availability of systematic and reliable tools to measure these achievements. Even where such information can be obtained through proxy indicators identified from Demographic Health Surveys (often produced by Ministries of Health) by the Ministry of Education its use seems to be very negligible.

As discussed earlier, the impetus for M&E in developing countries has emerged from international multi-lateral and bi-lateral donor agencies, and is largely due to the critical nature of the crises that many of these countries have faced, in terms of health (HIV/AIDS, TB and Malaria), and poverty (famine, drought, armed conflict and migration). However, it is seen that many emerging issues are not properly monitored due to a paucity of data. Often these programmes are run as donor driven initiatives with specific objectives and expected outputs. Measuring outcomes of some of the emerging initiatives, such as peace education, life skills, nomadic education, refugee education, 21st Century skills, HIV and AIDS education, citizenship and sustainable development, warrants the availability of both qualitative and quantitative data in order to study progress and assess impact. This is often found to be difficult due to the traditional quantitative study design of most data collection formats in the ministries of education.

The Case of HIV and AIDS Education:HIV and AIDS has become one of the major obstacles for many countries, especially the poorer and developing countries in sub-Saharan Africa, South Asia and SE Asia in achieving EFA by the target date of 2015. Apart from other challenges that hinder the progress of a country to reach the EFA target, HIV and AIDS adds substantially higher costs. It is estimated that because of the epidemic, 33 countries in sub-Saharan Africa would need an additional US$286 million a year to meet EFA goals (Bruns et al, 2003).1 While countries, such as South Africa, Kenya, Tanzania, Rwanda and Uganda, have made great progress in the areas of HIV and AIDS education,1 there is a general lack of availability of systematic evidence to measure achievements in this regard. For example, there is a critical shortage of reliable and disaggregated data on absenteeism of students and teachers, teacher shortages, classroom and school closures, class sizes and school enrolments, in relation to HIV and AIDS, and all lacking data disaggregated by sex and age. This shows that education ministries need appropriate M&E systems to provide comprehensive data about the impact of HIV and AIDS on learners, teachers and schools in order to inform policy makers and planners for the purpose of developing better targeted interventions with built-in mechanisms for timely responses. While many countries do not have an M&E system that can cater to such emerging challenges, some countries have managed to address the issue successfully. For example, Uganda has reduced HIV/AIDS prevalence from 14 percent in the early 1990s to about 4.1 percent in 2003. Uganda is one of a few countries in Africa to achieve such a drastic reduction. An important tool in this success was the use of evidence and information to educate Ugandans about the existence of HIV/AIDS and ways to protect themselves (Bakilana, A, et al, 2005).[1] Another example that can be cited of successful M&E that has incorporated HIV and AIDS monitoring is the case of Zambia (UNESCO, 2008).[1] The Zambian Ministry of Education has established many critical components necessary for a comprehensive response to HIV and AIDS, including: piloting a district education management and monitoring information system (DEMMIS), and creating structures with clearly defined functions and responsibilities established at national, provincial, district and school levels.

4.2.2. Strengthening systematic coordination

The need for an overarching coordination framework across all institutions responsible for the provision of education

Furthermore, the process of education from pre-school to the completion of higher education, or its equivalent, is a process that spans over 15 years depending on the choice of stream that an individual pursues. Monitoring progress of an individual's education and hoping that the desired outcome will be achieved at the end is a formidable challenge for any government. It is widely accepted that the availability of comprehensive, systematic and reliable information can help governments to monitor any cohort of students over a period of time. The existing monitoring mechanisms for education around the world have been developed separately under different institutional arrangements. As a result, most education monitoring systems lack an overarching coordination framework that works both horizontally across the ministries and vertically to include all levels of the government and all levels within the MOE.

The case for ECCE: The EFA perspective is that ECCE is one goal that relies heavily on inter-sectoral coordination and benefits from an effective decentralization of services. However, GMR 2010 notes that coordination between the relevant sectors is weak (especially for services for children aged 0–3 years). Still, some countries, such as Thailand, Bangladesh, Papua New Guinea and the Philippines have been successful in integrating the various services provided for ECCE through coordination mechanisms developed at the national level. Bangladesh ECD Network and the Philippines ECD Council promote better coordination between the MOE and the Ministry of Health and other agencies (ARNEC 2010).20 However, many such efforts suffer from a lack of accurate, reliable, valid and disaggregated data. Some countries in the Asia-Pacific region also face the challenge of a lack of proper integration of data from different sectors to make M&E more effective (ARNEC 2011[21],

Evidence from countries of the African, Asian-Pacific, Arab and Latin American[72] regions suggests weak coordination within MOEs and between line ministries responsible for education. For example, in Myanmar, the MOE, the Ministry of Border Affairs and the Ministry of Religious Affairs all collect data on the education programmes they implement independently using different methods and frequency for collection. Similarly, in Malaysia, about 38 divisions of MOE are responsible for monitoring their own divisions. Each division collects its own data and is responsible for such collection and analysis across the federal, state and local levels of the education system.[73] However, many countries have realized the need for a strong vertical and a strong horizontal coordination for effective and efficient functioning of M&E, and for many plans are being made to realize this need. Even very small countries in the Pacific region, such as the Solomon Islands,[74] Kiribati[75] and Fiji[76] have made good progress in trying to strengthen the coordination within and across their respective systems.

[72] UNESCO et al. 2015. Comparative Review of Policies and Practices on M&E of Education Systems- Regional reports - Asia Pacific, Latin America (working drafts).
[73] UNESCO Bangkok. 2015. Practices on Monitoring and Evaluation of Education Systems (working draft), Bangkok.
[74] Pedersen, Eric and Coxon, Eve. 2009. Review of Solomon Islands Education Sector wide Approach Arrangement, Pedersen Pierce Ltd, New Zealand.
[75] MOE Kiribati. 2008. "Nation Education Summit Outcomes" and "Education Sector Strategic Plan", MOE, Kiribati.
[76] Ministry of Education, Fiji. 2014. School standard Monitoring and Inspection Policy, Nadi, Fiji.

Proper and systematic communication and coordination within and between government line ministries/departments will result in more effective monitoring.

Even though it is widely accepted that the availability of comprehensive, systematic and reliable information can help governments monitor any cohort of students over a period of time, the existing monitoring mechanisms for education around the world have been developed separately under different institutional arrangements. As a result, most education monitoring systems lack an overarching coordination and communication framework or an explicit reporting and governance structure to make them more effective.

The education sector in most countries can deal more effectively with this challenge through a process of close observation and learning from other sectors which may be doing this better. For instance, this can be done by learning of the effective coordination mechanisms in the Health and Agriculture sectors.

There is a need for effective monitoring of students all the way until they complete their schooling and higher education. Some countries, such as Brazil, Peru, Republic of Korea and South Africa, have come up with different mechanisms to monitor the implementation of some of their own programmes through coordination. However, not all such efforts are considered to be effective.

An efficient intersectoral coordination framework is much needed in order to integrate the reporting processes for monitoring the implementation of policy recommendations and for clarifying the lines of responsibility and accountability of the different functionaries across sectors in order to facilitate the process of consistent and timely implementation of policy recommendations (World Bank, 2007). Such a framework will ensure better coordination between different mechanisms developed by different ministries and will efficiently utilize the monitoring efforts of each ministry. This will reduce the risk of the duplication of efforts and ensure that all priority areas within the education sector get the needed attention and thorough coverage that they deserve.

However, it must be recognized that this is easier said than done. The lesson learned is that there is a real challenge in ensuring that the implementation of monitoring processes is comprehensive, rigorous and timely and that they promote the overall coherence and cross-sectoral consistency of implementation.

Another lesson learned is that the implementation of an effective coordination mechanism relies on strong leadership at the top level of the administration and on the participation of all the concerned ministries.

An important lesson learnt from these discussions is that harmonization of the emerging data sets from different sources in the developing countries is still unrealized. In contrast, an increasing number of developing countries are now systematically using M&E for education for project management, financial planning and project evaluation. Another learning point is that even though the use of EMIS for school monitoring and evaluation is a reality in many countries, issues of quality of infrastructure and the capacity of personnel, still remain.

4.2.3. Designing M&E as a tool for decisionmaking at the national, subnational and school levels

The prioritization of M&E as an integral part of any programme or planning cycle has been shown to produce a good M&E system

The effectiveness of a good M&E system depends on several factors, such as coordination among line ministries and departments, and between all stakeholders, the availability of financial and human resources, the potential for generating high quality and reliable evidence, and the availability of necessary infrastructure for such a system to function.

National M&E systems focus on measuring the results produced by the programme-implementing departments. Again, such M&E systems may exist at the level of an individual agency, a specific department, the ministry, or the government as a whole. However, what is germane to this policy issue is whether such M&E can provide unique information about the performance of education policies, programmes, and projects — at the national and sub-national levels. It should be able to identify what works, what does not work, and the reasons why. Ideally, an M&E should also provide information about the performance of functionaries at the district level, such as administrators/managers, and at sub-district levels right up to the frontline units at the school level. The functioning of such an effective system depends very much upon the extent of priority given for M&E at all levels and stages of a programme and its implementation.

However, lessons learned from regional reviews indicate that many countries look at M&E as a programme-specific activity that is often recommended by a donor agency. Low priority is given to M&E as an important management tool, which, in turn, results in insufficient allocation of technical staff and financial resources for this component from the concerned countries' own budgets. The end-result of all this is an irregular and passive monitoring and evaluation exercise being undertaken which fails to give the right picture of the outcomes and impact of the overall programme to the government and other stakeholders.

Prioritizing M&E as an integral part of any programme or planning cycle can result in a good M&E system. This can happen only when a well-developed M&E framework is in place. An effective and sustainable M&E system has three important characteristics. The first is the intensive utilization of the M&E information provided by the system in one or more of the stages of the policy cycle and by various stakeholders. The second characteristic is the production of reliable and quality information, which should also be relevant and needs-based. The third characteristic has to do with the sustainability of the M&E system, that is, the likelihood of an M&E system surviving and continuing to be operational and efficient in spite of changes in the government or top officials of the concerned department/ministry, or the withdrawal of funding support of a donor agency.

Regular evaluations are required in order to assess the impact of policies on the target issues/groups

M&E is a continuous process. It starts off as a simple monitoring effort of inputs and outputs and it gradually metamorphoses into first, a combination of M&E and thereafter increasingly into an evaluation of impact. Thus, it may be construed as a process of measuring changes in a given situation over a period of time. Such changes and their quantum and quality may be anticipated; but sometimes they may be unanticipated too. What is important is that such measurements help in the proper understanding of the changes irrespective of whether they are positive or negative. Expected changes and windfalls may be positive in nature; however, sometimes some changes may reflect failures or unexpected problems. If the causes of such changes are understood correctly, it matters little whether they are positive or negative. The latter is particularly useful in revising policy priorities or programme planning. It helps programme management a lot in undertaking mid-course corrections. Hence it is equally important.

Monitoring takes place during a project's implementation phase, more so than in its initial years, and it answers the questions, what is happening? And, how is it happening? Only a good evaluation can answer the 'why' of both what has happened and what has not. It must be remembered that there is no water-tight division of M&E into distinct monitoring and evaluation modes. The distinction is only in the quantum of stress that is laid on the one or the other aspects at any point in the process.

Most countries give more importance to the 'monitoring' part of 'M&E' and less attention to evaluation. It is quite evident in many National Education Sector Plans that the M&E section focuses more on the monitoring of programmes, while evaluations are reduced to mid-term and final evaluations. Most evaluations are often carried out by consultants or independent agencies, and are often done as a requirement of donor-driven projects. Conventionally, emphasis has been more on input-output monitoring against benchmarks which trigger the release of fund tranches. In the post-2015 context, however, more emphasis is placed on the outcomes and impact on learning. Evaluations, if conducted at the right time and done well, can answer the question of impact of education on the learner, and the impact of a programme on the target group(s), etc.

The traditional emphasis on the monitoring aspect may be due in part to the fact that they hinge largely on conventional data-gathering methods, principally survey formats. Even in such formats, important information from open-ended questions or difficult-to-code kinds of questions are usually not summarised because it is extremely difficult to do so in the absence of any coding system to group them in to convenient codes for purposes of consolidation. Doing it manually is a time-cosuming and tedious task. Hence they are not usually captured fully. Sometimes, some key points may be captured but it is subject to the interest taken by the analyser. This leads to a situation of data processors tending to club vast arrays of responses into a few overall descriptions that they think could accommodate all the variations. The result is that most of the important and qualitative information relating to the evaluation goes missing in the final analysis.

In cases where special studies are conducted on specific aspects of a project or programme that may not lend themselves to closed-ended types of survey formats, such findings need to be balanced with the other quantum findings of the main survey. However, in practice, what happens is that there is distinct lack of balance between ongoing performance monitoring and the conduct of planned evaluations.

Due to the aforesaid reasons, evaluations are often undertaken at the end of the project and tend to focus on the project objectives. They often do not look at the overall impact of the programme on the given population. Instead, they end up more as duplications of the monitoring effort and fail to achieve the objective of finding out what has been the impact of a project on its target population. Thus, they are unable to throw sufficient light particularly on problem areas where there is gross under-performance. A better balance may possibly be achieved by initiating special evaluation studies alongside the monitoring process and without waiting for the project implementation phase to be over. However, it is important to ensure that such special studies are undertaken by fully trained and competent professionals. An important lesson is to see that such independent evaluations are left free to express what they actually find, positive or negative. Only then will the findings be useful for policy changes and consequent programme design changes.

Finally, evaluation results are often not disseminated widely. Even if disseminated, they are often not owned by the programme implementers and seldom reach the policy formulators for want of adequate advocacy skills on the part of the disseminators. They are mostly just one of the final tasks of the project completion phase. They are not seen as a continuum of the M&E system where findings from evaluation must be used for the next planning or policy formulation cycle. The result of

all this is that there is hardly any effort to identify advocacy champions to trigger the process of policy change. The unfortunate lesson here is that using the findings of the evaluation for policy research, policy analysis and preparation of policy notes and briefs as part of the process of advocacy for policy change is hardly recognized as an essential part of M&E.

SECTION V - RECOMMENDATIONS

5.1 Countries must have a systematic legal framework that recommends the setting up of a national M&E system for monitoring and evaluating education performance

Implementation (The Modality):

1. Advocacy efforts should be taken to the top government level for the development of proper legal frameworks;
2. If a framework that is already available is old, efforts must be taken to review and revise the framework, taking into account the current M&E needs;
3. The needed technical support for developing the framework should be provided; and
4. The framework should clarify the roles, responsibilities, and accountability of key players; for example, division heads, deputy heads, monitoring officers, evaluation specialists, programme managers, inspectors and others responsible for decision-making within the Ministry of Education.

Target Stakeholders: National Authorities, Ministry of Education, Parliamentarians
Technical Support: UNESCO
Other Partners: Civil Society, INGOs
Funding Support: National Government, Development Partners

Funding Requirement: High (It will be a challenge to get the necessary political commitment.)
Feasibility Level: Medium

5.2 In order to ensure that the M&E system becomes effective, a suitable national M&E framework and relevant standards and mechanisms for monitoring at all levels must be established

Implementation (The Modality):

5. Advocacy efforts should be taken by MOE with all ministries responsible for education, in order to ensure that M&E is made an integral part of all programme planning and implementation stages;
6. A coordination and communication framework should be developed with a view to integrating all the reporting processes from the different levels of the various ministries responsible for education and for monitoring the implementation of sectoral programmes; and
7. Suitable measures should be developed to ensure that sufficient communication takes place across the line ministries and departments about the role and purpose of M&E and how it can help promote efficient management of the functioning of the system and the programmes.

Target Stakeholders: Ministry of Education, all ministries responsible for education
Technical Support: UNESCO
Other Partners: UNICEF
Funding Support: National Government, Development Partners

Funding Requirement: Low. (It has more to do with coordination arrangements between MOE and other ministries responsible for education.)
Feasibility Level: Medium. (It will take time to get the coordination between ministries to function well.)

5.3 Adequate resources, both human and financial, must be provided for the setting up of a national M&E system for education

Implementation (The Modality):

- M&E framework must have a detailed budget for setting up the M&E system with costs included for both infrastructure and technical staff;
- Steps should be taken by the Ministry to ensure that there is strong and committed central political leadership and a comprehensive national M&E plan available to guide the actions to be taken to achieve the objectives of the M&E system;
- Efforts should be taken to sensitize all senior government functionaries, including the Parliamentarians and Senate members, so as to ensure that adequate resources are allotted for supporting the systematic monitoring and evaluation of programmes;
- In addition, attractive staff incentives and career opportunities should be provided in order to retain highly skilled staff in the M&E units; and
- Resources should be dedicated for conducting special and parallel evaluation studies.

Target Stakeholders: National Authorities, Ministry of Education, Parliamentarians
Technical Support: UNESCO
Other Partners: Development partners
Funding Support: National Government

Funding Requirement: High (Itwill be a challenge to get the necessary funds allocated for M&E.)
Feasibility Level: Medium

5.4 Adequate management capacity should be ensured at the top national level in order to ensure effective coordination between ministries implementing education programmes

Implementation (The Modality):

- Capacity for able and responsive management at the top level should be made available in order to ensure the proper functioning of the M&E system within and across ministries responsible for education;
- Where such capacity is available but found to be weak, provision should be made for building adequate capacity. Such capacity should particularly include skills of data appreciation;
- Such capable leadership should further ensure that necessary capacities are similarly built in all the coordinating institutions and agencies at all levels;
- Systematic needs assessment of the technical capacity of the M&E staff must be conducted periodically;
- Adequate funds and other resources must be provided for regular training of M&E staff for such capacity development on various technical aspects of M&E, including its use as a tool for effective and responsive management of programme implementation; and
- Capacity-building of M&E staff should also include advocacy skills for effective dissemination of evidence to all stakeholders, including the public.

Target Stakeholders: Ministry of Education
Technical Support: UNESCO
Other Partners: Development partners
Funding Support: National Government, Development Partners

Funding Requirement: High
Feasibility Level: Medium

5.5 Necessary action should be taken to ensure systematic and genuine coordination between the M&E system and the other stakeholders, including NGOs, community organizations and beneficiaries of the project, as well as other relevant ministries, such that there is transparency and accountability established and continuously improved upon.

Implementation (Modality):

- Action should be taken to provide opportunities for education officials to be exposed to more of hands-on monitoring and coordination work using the different approaches and techniques suited to or in vogue in the different ministries concerned with education;
- Governments should provide a suitable platform to work with the various stakeholders, including NGOs, community organizations and the beneficiaries, in the areas of project planning and monitoring of implementation;
- Possibilities of using Apex NGO coordinating bodies, where available, should be explored for coordinating the monitoring activities of various NGOs working in several geographical regions of a country in order to achieve a more harmonized way of reporting on progress of programme implementation;
- Pro-active community and NGO engagement with the Ministry of Education should be encouraged as a way of ensuring sustained strengthening of M&E; and
- Greater efforts should be taken to ensure that better coordination between producers and users of information takes place through effective involvement of community organizations in the planning and monitoring process.

Target Stakeholders: National Authorities, Ministry of Education, Parliamentarians
Technical Support: UNESCO, INGOs, Development Partners
Other Partners: Civil Society, Community Organizations, Media
Funding Support: National Government, Development Partners

Funding Requirement: Medium
Feasibility Level: Medium

5.6 Action should be taken to promote effective use of data by ensuring that the data are of high quality, reliability, timeliness, and easy accessibility and are disseminated to users at all levels from the top to the school and community levels; including plans in place to build capacity of stakeholders and planners in effective use of data.

Implementation (Modality):

- Action should be taken to sensitize all the concerned persons across the concerned ministries to pro-actively access and use evidence brought out by M&E data for the purpose of improving programme implementation;
- Both monitoring and evaluation must be seen as essential inputs to the annual reporting exercises of line ministries to Parliament;
- Efforts should be taken to inculcate the attitude in all users of data that any evidence is good evidence if it helps to improve the performance of implementation and the need to make the process of M&E more transparent and accountable;
- Suitable methodologies must be evolved to capture the impact aspects of monitoring;

- Specific evaluation policies on the nature of evaluation must be drafted including requirements for making evaluation reports available to all stakeholders;
- Action should be taken to ensure that the findings of evaluation studies form an effective basis for further action on policy research, policy analysis and preparation of policy papers and briefs for advocacy in order to bring about suitable policy changes;
- Action should be taken to ensure that the timeliness of data reporting and the feedback from top management are streamlined so as to make the M&E an operational management tool for timely alterations in programme planning and implementation as per local felt-needs; and
- Action should be taken to ensure sensitization, advocacy and capacity-building in the use of information in an efficient manner to all stakeholders, including NGOs, community organizations and beneficiaries of the project, as well as functionaries of other relevant ministries, such that it results in substantial improvements to education performance.

Target Stakeholders: National Authorities, Ministry of Education,
Technical Support: UNESCO and development partners
Other Partners: Civil Society, INGOs,
Funding Support: National Government, Development Partners

Funding Requirement: Medium
Feasibility Level: Medium

5.7 Action should be taken to improve the comprehensiveness of data collection in order for monitoring to include all critical issues and emerging new areas.

Implementation (Modality):

- Action should be taken to review the M&E system to ensure that it includes all new emerging areas and collects data on such areas related to education, especially its allied areas and other critical issues, such as refugee education, peace education, nomads' education, and HIV and AIDS education; and
- Due to the cross-sectoral nature of emerging allied areas, such as HIV and AIDS, access must be provided to M&E staff of MOE to other databases of the concerned ministries.

Target Stakeholders: Ministry of Education,
Technical Support: UNESCO and Development Partners
Other Partners: Civil Society, FBOs, Community Organizations
Funding Support: National Government, Development Partners

Funding Requirement: High
Feasibility Level: Medium to Low depending on the issue and the local socio-political context.

5.8 Greater emphasis should be placed on the use of state-of-the art technology and building necessary capacity of staff concerned with achieving speed and quality in handling big data, and also with achieving better harmonization of data across various databases within the MOE and between other concerned ministries.

Implementation (Modality):

- Action should be taken to introduce, wherever needed, state-of-the-art technology in handling voluminous data with a view to achieving speed and precision in handling such data; this may

warrant the allocation of adequate resources for installing the needed hardware and software and also for recruiting and training the needed skilled human resources to operate them and deliver the expected results;

- Action should be taken to integrate all the different databases available on other areas of education, such as ECD, non-formal education, TVET etc., or to find an effective way of harmonizing all the different data in order to address issues relating to such critical areas of education;
- A suitable data development strategy must be put in place for improving data processing speed and quality which are critical to the credibility of an M&E system. The capacity development needs of the M&E staff must be discussed in the data development strategy;
- Action should be taken to include in the data development strategy the needed technical skills of M&E staff to conduct different types of evaluations, since conducting an 'evaluation' is a skill often overlooked in training plans of the sector; and
- The state-of-the-art technology mentioned above should be made capable of timely dissemination of results to the public.

Target Stakeholders: Ministry of Education, Other Relevant Ministries
Technical Support: UNESCO
Other Partners: Development partners
Funding Support: National Government, Development Partners

Funding Requirement: High due to high cost of IT infrastructure and the data processing costs
Feasibility Level: Medium

COMPARATIVE REVIEW OF POLICIES AND PRACTICES ON MONITORING AND EVALUATION OF EDUCATION SYSTEMS:
A SUMMARY REGIONAL REVIEW AND SELECTED COUNTRY CASE STUDIES

Overall Review of the Status of M&E Systems in the Asia-Pacific Region

1. 1. Introduction

Over the past decades, countries in the Asia-Pacific region have successfully expanded coverage of education at all levels, particularly basic education. Yet issues of quality, equity, efficiency and system effectiveness remain major concerns as education systems in the region turn in mixed performances on international and national assessments. Given the increasingly strong recognition in Asia-Pacific of the role that robust data, monitoring and accountability systems can play in improving resource utilization and strengthening education system performance, governments and development partners have been investing resources in establishing various frameworks and mechanisms for the monitoring and evaluation of education development. Despite its importance, however, there has not been a comprehensive and systemic review of the trends and evolution of education M&E systems in the Asia-Pacific region.

This Asia-Pacific Region Comparative Review of Policies and Practices on M&E Systems was guided by the analytical framework prepared by HQ, and the preliminary desk review conducted by UNESCO Bangkok, comprised of published and unpublished reports and literature and policy documents related to the topic. These provided the foundation for the concept note and the Terms of Reference for the country case studies and regional reports. The basis of the country and regional reports was a literature review of the most up to date research, studies, publications, and detailed analysis of policy documents and relevant reports and data collected from various government and international organizations, especially data gathered from Ministries of Education. The specific national data and M&E education policy frameworks were analyzed, and the reports submitted by the regional and national consultants were synthesized to produce the "Asia-Pacific Regional Synthesis Report: Comparative Review of Policies and Practices on Monitoring and Evaluation of Education Systems."

Due to limited time and resources, the country case studies focus only on four countries, namely, Malaysia, Myanmar, Nepal and Republic of Korea. While information from other countries in the region was collected to the extent possible, this report does not claim to present findings representative of conditions across the whole Asia-Pacific region, as such a review may not give a comprehensive picture of the "reality on the ground". The regional reports, however, do cover a good representation of several other countries and economies in the region including ASEAN Member States: Fiji, India, Japan, Hong Kong (SAR China) and Shanghai (China).

Despite these identified limitations, the country cases and the regional reports have been used to provide a general overview of the current situation of the M&E policies and practices in the Asia-Pacific region thereby facilitating the development of policy recommendations through the identification of lessons learned and factors contributing to the effectiveness and efficiency of M&E systems at different stages of development. This regional synthesis report is intended to be the first step toward improving the M&E systems of the Member States for better and responsive education policies in line with the post-2015 agenda.

2. 2. M&E Systems in Asia-Pacific: Current Status and Trends

M&E systems in the Asia-Pacific region have been undergoing substantial changes in the past decade in line with international developments, though at a diverse pace. Most education systems have developed the main sub-components of an M&E system, namely: (1) school record keeping systems, (2) statistical data systems, (3) resource management systems, and (4) performance evaluation systems. However, the extent to which these sub-components have been integrated has differed, as has the usage of information obtained from the M&E systems. The relationships between these sub-components have often not been discrete or clearly delineated.

In summary, system development across the Asia-Pacific region has been underlined by three principles: a) decentralization, b) integration of the sub-component systems, and c) focus on results. In several cases, development strategies were supported by robust 3-5 year information system plans that identified clear blueprints for the development of systems, which included anticipated ongoing operational costs for systems. Sophisticated systems were supported by strong policy and legislation such as those pertaining to the transfer or promotion of staff.

The Fiji Education Information System (FEMIS)[77] is an example of a fully integrated School Information System which also functions as Resource Management System. The system was built based on a redesign and integration of four different systems (SIMS, FESA, LANA, and ATLAS). However, despite its proven benefits in saving time, reducing administrative paper work, improving transparency and significantly enhancing the capacity to monitor schools and issues pertaining to teachers and pupils, issues and barriers such as poor internet connectivity, lack of skills and time and reliance on old ways of doing things are still reported. Cambodia and Fiji SMIS are supported by partners like the European Commission and the Australian Government Department of Foreign Affairs and Trade (DFAT), respectively.

3. 3. Description of M&E Systems in Asia-Pacific

3.1. Statistical Data System

Statistical data systems (often called Education Management Information System or EMIS) are designed to collect, compile, collate and analyze the school-level data (students, teachers, facilities, finance, etc.) for policy and programme formulation, implementation and monitoring at different administrative levels.

The Statistical Data System is the most basic form of education information system which typically relies on using data capture forms, such as school census forms, to obtain data from schools on a regular basis, often on an annual basis. At the school level, data on schools is retained in school records and other forms such as examination result booklets. The census forms usually require recording of aggregated information for students, teachers, facilities, finance and other attributes. Data are often verified and entered at a sub-national level such as district, local government area or state and collated or passed directly to the national level for publication of school census statistics. Data are then used for budgeting, planning and identifying schools most in need of resource allocation. The Nepal EMIS, for instance, uses Flash Reports I and II to allow systematic accumulation of all school level information into a single report. The data generated are used in the formulation of plans and policies, and for allocation of budgets.

The Cambodian School Census System and the Indian School Census System, called the Unified District Information System (U-DISE), are examples of school census systems operated nationally.

[77] http://www.femis.gov.fj/femis/

The systems use a data capture form to collect information on teachers, students, income, facilities, and staff of provinces, cities and districts. The data are verified and validated at the district, provincial and local government levels (Cambodia) or up to the national level (India) before it is shared with National University of Educational Planning and Administration[78] (NUEPA) and Ministry of Human Resource Development[79] (MHRD).

To address data flaws, India and Cambodia conduct 5 percent validation exercises to verify data at the school level, using external independent organizations and government supervisors and officials. However, the results of the verification exercise are used only to correct data in schools verified and not for purpose of recalibrating the data or reporting confidence levels in data. As expected, significant problems remain in terms of consistency between Cambodian data compared annually with the sub-national level (GoC, 2014; GoC, 2013b) and nationally published figures triangulated against other sources of education data such as household surveys. Similarly, many states in India have noted that the data derived from their Resource Management Systems do not compare favourably with data derived from the school census (Karnataka, 2014; Madhya Pradesh, 2014).

3.2. Resource Management System

Resource Management Systems (RMS) facilitate processes and functions within ministries, for example, 1) teacher management (or Teacher Management Information System – TMIS) which is designed to support the management of teachers' recruitment and deployment, and 2) financial resource management (or Financial Management Information System – FMIS) which aims at conducting the transactions and monitoring the financial status of the education institutions. (In some cases, this system can be part of a larger system managed by institutions other than the Ministry of Education). These are also often called Operational Systems or Transactional Systems.

RMS can be distinguished from Statistical Data Systems in that they manage individual transactions such as teacher transfers, recruitment of new teachers, procurement of assets or logging of individual budget lines made to schools. RMS generally aims at improving the efficiency of education services. It may sometimes rely on data collected via census. For example, in the case of Madhya Pradesh in India, the number of sanctioned teachers allocated to schools is calculated based upon a formula determined by pupil enrolment in each grade and by the number of teachers presently at the school. The pupil enrolment is presently collected via census[80] while teacher data are managed dynamically through the Madhya Pradesh Education Portal.

Cambodia and two states in India provide a typical example of census-based systems that are being gradually replaced and/or integrated with operational systems using information technology. Since late 2014 onwards, Cambodia's long-standing statistical census system is being updated and elements replaced or integrated with operational systems. The new system is being deployed to state offices via the internet. Presently, all data are managed from state education offices; however, in 2015-2016, the decentralization of functions to selected Local Government Areas (LGA) with good internet access will be piloted (GoC, 2013). The systems being piloted in Cambodia will provide more detailed and timely data by managing operational and transactional needs for staff and financial management, and by enabling school census data to be reported more accurately and in less time than the present statistical data system.

3.3. Performance Evaluation System

[78] http://www.nuepa.org/Index.html
[79] http://mhrd.gov.in/
[80] using U-DISE data

A performance evaluation system is an M&E system mainly for monitoring, used mostly for process and output related factors in the education sector. It includes a school inspection and evaluation system which is carried out by the Ministry of Education to observe and inspect whether schools comply with and follow the rules, regulations and standards set by the relevant authorities, and a teacher evaluation system whose function is carried out by relevant education institutions to evaluate the performance of teachers. In some cases, a teacher evaluation system may be integrated into TMIS and EMIS.

3.3.1. School Inspection and Evaluation System

Notably, in most Asian countries, before the last decade, evaluations were based on teacher or student performance, and school evaluations relied almost exclusively on teacher appraisal with a focus on administrative oversight and control of individual teachers or examinations, especially the assessment of individual student achievement. However, in recent years, there has been a stronger sense of quality assurance in education systems in the region: the concept of evaluations in education has been shifting from various forms of control in monitoring and evaluation towards a combination of accountability and developmental aspects in quality assurance of schools. In addition, due to increasing adoption of decentralization in many countries of the region and their implementation of school-based management, more countries have replaced or are in the process of replacing their traditional school inspections, which are mainly conducted by inspectors or government officers, with a combination of school self-evaluation plus external school review of school performance evaluation. This usually involves different stakeholders, particularly the local community. For example, countries such as Nepal, Malaysia and the Philippines have set up "competitions" or national awards for schools displaying outstanding performance as a means of school evaluation.

In some developing countries, they are working hard to either re-establish or improve their quality assurance systems, although in different ways and at quite diverse paces. Cambodia, Vietnam and Pakistan have established education laws and policies for setting up M&E systems in education in the recent decade. In addition, most countries have a formal system of external school inspection, school review or school audit, except the Philippines. Yet, while the Philippines and Indonesia do not have a formal policy or mechanism for school self-evaluation, other countries vary in their implementation of school self-evaluation.

Specifically, two examples of successful implementation of quality assurance framework in evaluating schools designed by an input-process-output model are Hong Kong and Singapore. The Hong Kong framework is supported by a set of quality performance indicators and composed of two parallel processes of self-evaluation and external review of schools with emphasis on school development and accountability. The Singaporean model involves a tripartite approach – ongoing school self-assessment, the school improvement process, and validation every five years via an external evaluation. The system of having MOE officers inspect schools was replaced by a self-assessment approach, complemented by external validations every five years (recently revised to six-yearly cycles) undertaken centrally by MoE.

Teacher evaluation, at its most simplistic level, is defined as a formal assessment of a teacher by an administrator conducted with the intention of drawing conclusions about his/her instructional performance for the purpose of making employment decisions. There is a vast body of research confirming that teachers are the main change agents for quality education, such as the 2011 Trends in International Mathematics and Science Study (TIMSS) report indicating that the better the teacher quality (i.e. teacher effectiveness), the less the incidence of low achievement. As such, it has become

more important to evaluate the performance of teachers, which, hopefully, in turn will have positive impact on student performance.

Countries across the Asia-Pacific region are implementing more holistic and systematic evaluations with more effective approaches for strengthening teacher evaluation based on their own unique challenges. Traditionally, formal teacher appraisal has been one of the most common and key strategies for monitoring and evaluating teacher performance in the region. This usually focuses on procedures rather than on student learning. The evaluations focus on the use of "high inference data" from checklists based on a limited sample of class observation, with little differentiation in teacher performance and administrative decisions constrained by union contracts and laws. In many cases, the evaluations are undertaken simply to fulfil administrative requirements and hence are less likely to result in any change in a teacher's career advancement, leading to growing demand to restructure the teacher appraisal mechanism. The focus on teacher evaluation has intensified since the early 2000s, but systematic evaluation of teachers has found only minimal empirical support in its application to the education sector.

Many countries have been moving away from a purely quality control approach, such as teacher certification and teacher appraisal, to a capacity-building approach such as professional development, teacher support and career pathways. In particular, the use of results-based evaluation or competency-based evaluation has become more common in order to improve teacher performance. A typical example is the Singapore's Model for Teacher Development, more commonly known as the Enhanced Performance Management System (EPMS), in which teachers set their goals for teaching, professional and personal development at the beginning of a year through a self-assessment, discuss the goals with a reporting officer who may advise additional training and coaching arrangements, and undertake informal and formal evaluation meetings to evaluate teacher performance and future potential, which may be used to determine performance bonuses and promotions.

However, effective monitoring of teacher performance requires agreement on key concepts, alignment of measurement tools, and consensus concerning the indicators and underlying framework. Furthermore, there are financial considerations such as the training of observers, the design and management of information systems, the question of salary differentiation and the opportunity costs of investing in other strategies. There is a huge gap between the results of research on teacher effectiveness and the impact of teacher evaluations. In the context of the Asia-Pacific region, job security is a key attractor for teachers. If there is no effective and thorough preparation of the necessary conditions, it is not necessarily a good thing to implement teacher evaluation systems. In most Asian countries, cultural norms of harmony and compromise do not support harsh personnel accountability measures. Therefore, rather than using evaluations to improve the quality of instruction, focus has been put on improving supervision, coaching, mentoring and professional development mechanisms.

3.3.2. Student Evaluation System

In all countries across the region, the student evaluation system is an important tool and a major component of evaluation and school reform, which aims at improving academic standards and quality. Many assessment systems usually include a mix of the following: (a) public examinations for selection and certification, (b) national and international assessments and (c) school- or classroom-based assessment of students' learning. This mixed landscape is a departure from the past when only examinations were used often to simply distinguish the 'able' from the 'not able' students.

Public Examinations

Public examinations are generally high-stakes to students and are usually administered at certain transition points of schooling for selection and certification purposes, such as at the end of primary (entry to secondary), end of lower secondary, and end of upper secondary (entry to higher education or to the workplace) (Hill, 2013, p. 4; Ho, 2013, p. 7). In most countries within the Asia-Pacific region, examinations represent an important quality control mechanism and examination results are often used for school accountability purposes (Hill, 2013, pp. 4 & 19).

Currently, there is a group of countries in the region still following the so-called traditional British model of 11+ examinations (end of primary), followed by General Certificate of Education (GCE) 'O' Level or GCSE exams (end of lower secondary), followed by GCE 'A' Level exams (end of upper secondary). This is still the pattern followed in many Asia-Pacific countries, including Brunei Darussalam, Fiji, Indonesia, Iran (Islamic Republic of), Mongolia, Singapore and Sri Lanka. Just as the 11+ examinations were discontinued in the UK with the introduction of comprehensive secondary education, many Asia-Pacific countries (Australia (NSW), Bangladesh, India, and Pakistan) have also discontinued the first of these examinations while retaining the second and third. Hong Kong (China) still conducts testing for secondary school placement purposes, but uses a fairly complex process of statistically moderated primary school assessments, with a special aptitude test to 'moderate' the school assessments. In yet other countries, the second or lower secondary examination has also been discontinued as upper secondary education has become available to all. For example, Hong Kong (China) discontinued its second examination after 2012. There is another group of countries that adopt a different model, including China, Kazakhstan, Kyrgyzstan, Japan, Philippines and South Korea. In each of them, the key examination is the university entrance examination (Hill, 2013).

National and International Assessments

National Assessments

National Assessments (NA) provide rich information about learning outcomes according to nationally defined standards. NA are generally low-stake to individual students and the findings are used to monitor the progress of the national system (Ho, 2013, p. 7). Results from the *EFA Global Monitoring Report 2008* indicated that in this region the percentage of countries that conduct national assessments drastically increased from 1995 to 2006. Recent information collected by the Secretariat of the Network on Education Quality Monitoring in Asia-Pacific (NEQMAP) has revealed that, as of 2014, virtually every country of the region has conducted at least one such NA. Examples include the National Assessment of Educational Achievement (NAEA) in the Republic of Korea, the purpose of which is to evaluate how many students achieve the goal of national curriculum and track the yearly academic progress of schools, and the National Assessment for Student Achievement (NASA) in Nepal.

While Ministries of Education are usually responsible for developing standards and the operation systems for NAs in most of the region, some countries, such as the Republic of Korea, New Zealand and Singapore, delegate this responsibility to independent institutes. In addition, some other countries, such as Cambodia, collaborate with international agencies to support the initial developmental stages of their NAs. NAs may target sampled students from particular schooling levels, age groups or otherwise involve the entire target population. For instance, Hong Kong (China) and Japan administered NAs to students of grades 3, 6 and 9. NAs typically assess attainment in core subjects, notably the national language, specific second languages, mathematics, natural sciences and social sciences. The frequency and scope of NAs vary depending on the purposes of monitoring (Ho, 2013, pp. 8-11). However, one common challenge that can be identified across the region, both in terms of national and international assessments, is the proper dissemination and usage of results. While many countries are using such results for tracking purposes, it is less common for them to be embarking upon curricular reform or changes to teacher training as a consequence.

International Assessments

International Assessments, such as the OECD's PISA and IEA's TIMSS and PIRLS, have become important sources of information for monitoring student learning outcomes. These assessments allow cross-country comparisons based on international benchmarks which help countries to evaluate strengths and weaknesses of their education systems from a broader context (Ho, 2013, p. 5). Given that in the Asia-Pacific region there is no regional standard for learning assessment, the need and importance of using these international evaluations for benchmarking students' learning outcomes with international standard is growing very fast, and to a certain extent becoming the norm (Ho, 2013, p. 5; The ASEAN Secretariat, 2013, p. 22). For example, sixteen, fourteen and eight Asia-Pacific countries or jurisdictions participated in the latest administration of PISA (2012), TIMSS (2011) and PIRLS (2011), respectively. In addition, though there is no Asia-Pacific regional standard or assessment, there are a number of efforts under way towards the development of sub-regional standards or metrics, such as the Southeast Asia Primary Learning Metric Initiative for the Southeast Asia sub-region and the Pacific Islands Literacy and Numeracy Assessment for the Pacific sub-region. Beyond these efforts, there is a strong trend in support of regional collaboration on student assessment issues, as evidenced by the launch of the NEQMAP network in 2013.

School- or Classroom-based Assessment

While it is not universal, the region has seen increasing reform in the direction of school- and classroom-based assessment. Countries/jurisdictions which have adopted such modes include Australia, Hong Kong (China), Malaysia, New Zealand and Singapore. Their rationale includes the desire to reduce student pressure from examinations and enhance their authenticity, as well as enable teachers to have a deeper understanding of their students' learning, decrease tendencies of 'teaching to the test' and assess a full range of skills and competencies, including the so-called "21st Century" or "transversal" skills which may not be measured in traditional tests. While generally formative in nature, some countries/jurisdictions such as Hong Kong (China) and New Zealand include a component of school or classroom-based assessment in their summative public examinations (Ho, 2013).

Given these various components of the student evaluation system, it is worth noting that many countries of the region have established national monitoring systems to collect information on student learning outcomes across these different components and to develop indicators of school performance at national and sub-national levels (including local communities and schools) for comparing, benchmarking and developing polices and interventions to improve educational outcomes. The developing countries of the region face particular challenges including funding, capacity, institutionalization of student evaluation systems, and the dissemination and use of assessment results (Ho, 2013).

4. 4. Policy Issues and Emerging Trends

5.

In this section, five key policy issues emerging from the regional review are presented. While these issues are presented in a list, it is important to note that these issues are often inter-connected.

<u>Policy issue #1: Effectiveness (quality and relevance)</u>

Abundant data are becoming increasingly available, but they do not sufficiently inform evidence-based planning, monitoring, or the decision-making process.

<u>Policy issue #2: Resources</u>

Many M&E Systems are under-funded, under-staffed, and often dependent on external partners for both financial and human resources.

Policy issue #3: Coordination
Sub-components of M&E systems often function in silos without coordination, often leading to inconsistency and duplication.

Policy issue #4: Capacity
Ensuring sufficient capacity at all levels of administration for effective linkages is a challenge.

Policy issue #5: Information sharing and mutual learning
There is limited information sharing between sub-components of M&E systems. Platforms for mutual learning, especially at the regional level, are missing.

6. 5. Key Recommendations for Asia-Pacific

Policy recommendation #1
Focus on developing systemic capacity for "emerging" data needs

Policy recommendation #2
Integrate cost of meeting the data needs in every policy and plan development cycle

Policy recommendation #3
Strengthen national M&E coordination bodies with mandate and authority

Policy recommendation #4
Enhance institutional and individual capacity at all levels

Policy recommendation #5
Plan for integration of the systems into a single platform with proper quality assurance mechanisms

7. Country Case Studies

In this section, in-depth information from four selected countries is presented in order to demonstrate different stages of development of an M&E system in education. The countries have been selected on the basis of: (1) geographical distribution (two from Southeast Asia, one from South Asia and one from East Asia); (2) recent trends in education policy development related to M&E; and (3) availability of literature and data.

8. Malaysia

Background

The Education System in Malaysia is centralized and regulated by the Ministry of Education, which is responsible for policy development around access, personnel, curriculum, methods and materials, resourcing, community and evaluation policies from pre-schooling to higher education under the national education system; that is, all government schools (national and national-type) all over the country must deliver the same curriculum, employing the same medium of instruction (Ministry of Education Malaysia, 2010).

The past two decades have seen a series of radical shifts in policies, practices and systems of education at all levels from primary-schooling to higher education in Malaysia. Various policy initiatives have been introduced specifically on teacher development, curriculum development and assessment and use of technology in education. The most recent policy reform in education is seen in the Malaysia's Education Blueprint (2013-2025). The blueprint adopts a 'systemic approach' to education reform and identifies eleven key areas for reform that will address at least one of the five cross-cutting system outcomes, namely, access, quality, equity, unity, and efficiency.[81]

Current Analysis of M&E Systems

In order to ensure that the above desired outcomes are displayed in its school systems, the MOE has to conduct several rounds of monitoring and evaluation. The MOE consists of four administrative levels and each of them has monitoring and evaluation functions. The Central Education Division (CED) is responsible for managing the national education system, formulating the national education policies and plan, establishing guidelines for their implementation, and monitoring and evaluating outcomes of the plans. The State Education Departments (SED), on the other hand, are responsible for ensuring that the policies developed are translated and implemented at the specified levels, as well as for monitoring and evaluating their implementation. District Education Offices (DEOs)/Regional Education Offices (REOs) are responsible for assisting the SED in implementing, monitoring and evaluating the policies and programmes implemented at the district and school levels. Monitoring and evaluation are also done at every unit in the Ministry. All the thirty-eight units in the Ministry have their own projects to monitor and evaluate. Other projects that are not directly under their responsibility will be monitored by the newly created Performance Delivery and Management Unit (PDU).

The M&E system in MOE is divided into three categories namely: Legacy System (Education Management Information System - EMIS, Student Information System- SSM, Smart School Management System- SSMS), Secondary System (Students' Discipline System-SSDM, Headcount) and External System (Examination System, Scholarship, Malaysian Education Quality Standard-SKPM, Teachers Development and Training Information and Teachers Training). According to the Technology Information and Communication Division (BTMK) record, there are a total of eighty-two major data systems owned and managed by different divisions in the Ministry which consist of

[81] http://www.unescobkk.org/th/news/article/malaysia-education-policy-review-a-systems-approach-to-education-reform/

school, student and teacher data systems. In addition, there are also other independent information sub-systems that were developed with the intention of meeting the needs of individual division's operational responsibilities for collecting and managing educational data.

Conclusion

Malaysia has a rich history of monitoring and evaluation with regards to its education system. However, with the introduction of the recent Malaysia Education Blueprint, there is a need to re-evaluate and build upon the M&E system that is currently in place. While many positive structures exist, refining these to properly inform education policy and planning at all levels of government is extremely important. Evidence-based decision-making is needed in order to effectively propel implementation strategies that will bring to fruition the careful planning and consideration of the MOE.

9. Myanmar

Overview of the Education Sector Development

The Education Policy of Myanmar is set out in the 2008 Constitution and is governed by two main laws: the Basic Education Law of 1973 and the University Education law of 1973, both of which are under review for updates. The aim of the government's educational policy is to create an education system that can generate a learning society capable of facing the challenges of the knowledge era. The social objectives for education in Myanmar are ambitious and include for students: developing a problem-solving and creative orientation toward institutions and social issues; promoting national unity and eliminating discrimination; learning to work cooperatively with others; and developing self-reliance. The Constitution declares that all citizens have the right to education and shall be given compulsory education (UNESCO/IBE, 2011).

Myanmar is striving for free and compulsory primary education to achieve the EFA goals. The government has made arrangements to distribute free textbooks to all primary students, provide scholarships to outstanding students and stipends to students from poor families, and construct more schools in border areas and villages. The number of schools, teachers and students has increased dramatically. In the past decade, there has been a 10 percent increase in the number of schools, 30 percent increase in the number of teachers, and a 25 percent increase in the number of students (MOE of Myanmar, 2014a).

Yet, despite recent developments, it is generally accepted that the education sector has challenges to increase net enrolment at different levels and ensure the quality of education. Poverty, diverse languages of over 130 national ethnic groups and conflict situations mentioned in the earlier section also create challenges that affect the education sector (MOE of Myanmar, 2014a).

The biggest reform initiative to the education system was started in early 2012, when the government announced the Comprehensive Education Sector Review (CESR), the first systematic sector analysis in two decades. It completed the first phase of the review in 2013 in collaboration with development partners in education. This resulted in a series of reports in 2013 — including four technical annexes covering secondary education, higher education, TVET, and a labour market analysis (the demand for higher education and TVET graduates) — which provide much needed data and information on the state of education. The review is now in Phase 3, developing the National Education Sector Plan (NESP), a unified plan to guide government and development partner investments in the sector up through the next 5-year period (ADB, 2014).

Overall Appraisal of the Current M&E Systems

In Myanmar, the Education Management Information System (EMIS), run by the Ministry of Education, is responsible for supplying the education sector with comprehensive, shared, accurate and up-to-date information for planning, resource allocation, and monitoring and evaluation to support decision-making. At the national level, education data that is accessible is produced in limited formats. An Annual Statistical Booklet with nineteen tables is produced, which is compiled by the Department of Education Planning and Training (DEPT) in conjunction with universities and other ministries. Almost no data is available on the official MOE website. Education statistics are sent to development partners and international statistical organizations such as ASEAN, UN, UNESCO (UIS) and ADB. Often statistics are produced up to one academic year after collection owing to the labour intensive process required to compile the statistics.

Summary of Myanmar EMIS

1. There is substantial redundant data collected at unnecessary intervals. This increases the scope for error and significantly increases the required data entry and management correctives, thereby limiting the scope of data analysis and use.

- There are limited tools with which to aggregate or analyze data, resulting in a situation where any data analysis has to be undertaken manually.
- Data are largely processed and then sent to higher levels. Such data, again, are rarely responded to as feedback back down the line with comparative information and comments, which could be used to inform corrective action for further planning and budgeting does not occur.
- Some data, such as financial data, are only stored in paper form which would be better recorded electronically.
- Longitudinal (historical) data analysis is very difficult to undertake as information for different months, years, etc. is stored in different spreadsheets. Likewise, validating data historically is difficult for the same reason.

Overall, the country's EMIS is still weak and data are not yet sufficiently disaggregated and rendered comprehensive enough to meet the requirements of educational planning, policy-making, management and administration. Myanmar needs to improve its Educational Information System, which is essential for monitoring Education for All progress in ECCE, UPE, Learning and Life Skills for Youth and Adults, Adult Literacy, Gender Parity and Equality, and Quality of Education (MOE of Myanmar, 2014a).

10. Nepal

Overview of the Education Sector Development

Since the establishment of democracy in 1951, Nepal has made significant progress in the whole education sector, including early childhood development and pre-primary, primary/basic, secondary and tertiary education. Great strides have been made towards the huge expansion of early childhood development and pre-primary education, universal primary/basic education, increased participation in secondary and tertiary education and universal literacy, especially for youth, along with gender parity. Nonetheless, the progress is not even and a deeper analysis of reaching the unreached, i.e. disadvantaged and marginalized groups, reveals that more concerted and targeted efforts are needed to achieve greater equity and coverage of all levels of educational development.

Early Childhood Development and Pre-primary Education (ECD/PPE)

The concepts and practices regarding the provision of early childhood development and pre-primary education in Nepal have emerged as important developments, at least from the perspective of

quantitative expansion; however, its overall quality and level of funding[82] are serious concerns. Currently, there are 34,622 community- and school-based ECD centres and pre-primary classes (PPCs) with more than one million children. The average Gross Enrolment Rate (GER) in ECD/PPCs reached 76.7 percent, with 76.2 percent for girls and 77.2 percent for boys in the school year 2013/14. The proportion of children in grade one with ECD/PPC experiences stood at 56.9 percent, with 57.6 percent for girls and 56.2 percent for boys in the same year. In this respect, it is worth mentioning that the School Sector Reform Plan (SSRP 2009-2015) underpins one year (age 4) of early childhood education and development (ECED) for all, especially the disadvantaged.

Primary/Basic Education

Primary education, the first level of education as per the International Standard Classification of Education (ISCED),[83] comprises five years of schooling (grade 1-5, ages 5-9) in Nepal. The second level of school education, i.e. lower secondary education (grade 6-8, ages 10-12) has been included in basic education (grade 1-8, ages 5-12). In this connection, it is appropriate to mention that the Interim Constitution of Nepal (2007) enshrines basic education as a fundamental right and stresses the right of each community to get basic education in their mother tongue as provided for in the law. In line with the principles of this provision, the School Sector Reform Plan (SSRP 2009-2015) has provisioned the use of mother tongue as the medium of instruction in the early grades of primary education. Curricula and textbooks are available in more than twenty-two languages and the school annually reports on the use of mother tongue/local language in primary education. However, despite significant improvement in net intake and net enrolment rates (NIR/NER) in primary/basic education, it has been a massive challenge to improve the internal efficiency of the school education system in Nepal to ensure that every child admitted in grade one completes five/eight years of primary/basic education with an acceptable level of learning.

Secondary Education

According to SSRP, school education consists of basic education (grade 1-8) and secondary education (grade 9-12), with sections, secondary (grades 9-10, ages 13-14) and higher secondary (grades 11 and 12, ages 15-16). A national-level centralized examination, popularly known as the School Leaving Certificate (SLC) examination, is conducted at the end of grade ten. Further, higher secondary education examinations at the end of grade 11 and 12 are organized by the Higher Secondary Education Board (HSEB) at the national level. It is proposed that in the integrated secondary education from grade 9-12, SLC and HSEB will be reorganized, with provisions of grade ten examinations at the regional level, and grade 11 and 12 examinations at the national level.

There is also a provision for higher secondary level technical education under the Council for Technical Education and Vocational Training (CTEVT). Currently, technical schools affiliated to the CTEVT offer skills training courses of one year to two and half years' duration either to the tenth grade[84] pass students or to those having a Technical School Leaving Certificate.[85]

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[82] An analysis of the total education expenditure by sub-sector reveals that overall expenditure on early childhood development and pre-primary education is less than one percent, which has serious consequences on the provisions of salary/remuneration of facilitators/teachers, their qualifications and training, infrastructures, learning materials, means of care and entertainments, etc.

[83] Classification system designed to serve as an instrument for assembling, compiling and presenting comparable indicators and statistics of education both within countries and internationally. The system, introduced in 1976, was revised in 1997 and 2011 (Quoted from EFA GMR 2013/14, UNESCO 2014, Paris, France).

[84] Tenth grade pass students are academically at a lower level than those who have passed the School Leaving Certificate examination. Students take send-up examination at the end of grade ten and those who pass the examination become eligible to take the SLC examination.

[85] Students having a Technical School Leaving Certificate are the ones who have taken vocational stream after eight grades and completed two years of vocational training. The practice of admitting such students into vocational schools has been abolished after the enforcement of new policy related to technical and vocational education.

Tertiary Education

Currently, there are nine universities and three autonomous, specialized institutions of higher education for medical/health sciences. Tribhuvan University (TU) is the first university in the country. It was founded in 1959 as a teaching and affiliating university. Nearly 89 percent of higher education students and faculties are in this university.[86] HSEB graduates are eligible to apply for general or professional Bachelor's Degree courses of 3-to 4-year duration. The Master's Degree follows the Bachelor's Degree and is of two-year duration. The universities also run MPhil and PhD programmes. The University Grants Commission (UGC) of Nepal co-ordinates the universities with national plans and programmes.

Non-formal Education

In addition to formal education, there are provisions of non-formal education for primary/basic and secondary education with policy and planning frameworks for reaching the unreached. Out-of-school adolescents, youth and adults who could not attend primary school due to various reasons join the Out-of-School Programme (OSP). There are also provisions for flexible/open school programmes with condensed courses for those who could not join regular hour schools. Various forms of adult education programmes, such as basic and functional adult literacy and open school programmes are organized with provision of equivalency to school education up to secondary level (grade 1-10). According to the national census 2011, the contribution of non-formal education to the overall educational attainment of people in Nepal is 4.15 percent, with 3.49 percent for males and 4.95 percent for females.

Overall Appraisal of the System

Nepal collects and analyzes vast amounts of data, most of which are collected at schools by teachers. There are different governmental and non-governmental organizations that keep records of various educational data and information in Nepal for monitoring and evaluation purposes. Findings of the review suggest that data and information accumulated through EMIS and other sub-components need to be shared with and linked to other governmental organizations at the national and district levels. It is important to establish a mechanism of establishing linkages among the different MIS systems horizontally and vertically. The sharing and inter-linking of data can reduce duplication of efforts and generate a lot of information on time. In addition, while it is evident that data generated from different systems are used by the National Office to monitor progress and produce desirable results and reforms in education, the lack of feedback mechanisms between and among the data suppliers and data receivers and the quality of data collected are also important concerns that need immediate attention for quality education planning and monitoring.

11. Republic of Korea (RoK)

Overview of the Education Sector Development

Education in the RoK has undergone substantial changes since the establishment of the modern Korean education system in 1945. In its foundational phase (1945-1959), the education policies focused on expanding coverage of basic education, especially compulsory primary education. As a result, primary enrolment rate increased to 96 percent as early as 1959. The illiteracy rate, which was 78.2 percent in 1948, decreased to 4.1 percent by 1958. The expansion stage (1960-1979) saw heightened interest in education among the Korean people and education opportunities were substantially expanded. Technical and vocational education and training (TVET) was also

[86] MOE. 2014. Nepal Education in Figures 2014: At-A-Glance. MOE, Monitoring, Evaluation and Supervision Division, Education Information Management Section (EMIS), Singhdarbar, Kathmandu, Nepal. Website: www.moe.gov.np.

strengthened and the role of tertiary education was emphasized as well. This was to produce the necessary human resources for the RoK's rapid economic development and for modernizing its industry.

In the education substantiality stage (1980-1999), negative impact of competition in education (e.g., university entrance) became clear and the importance of an open education system which prepares students for the 21st Century's information and globalization age was emphasized. Between 1995 and 1997, four education sector reforms with 48 specific tasks were proposed. They included: (1) establish a base for open education and a lifelong learning society; (2) diversify and specialize universities; (3) establish school community to autonomously manage primary and secondary schools; (4) reform curriculum to include the humanities and creativity; (5) reform university entrance system; (6) provide education that respects each learner's individuality. Current education policies in the RoK are very much influenced by the directions set by these policies.

Since 2000, the focus in education has been on strengthening its global competitiveness and preparing students for such competition. The principles of autonomy and competition with accountability in education have been emphasized during this period. Especially, developing human resources has become the main policy of education. However, compared to the past policies that emphasized economic values of school education, the current education policies have shifted their focus to promote holistic and lifelong learning beyond schools. The key education policy foci are creativity, global competitiveness, and science and technology for building a knowledge-based society for the 21st Century. Autonomy of schools has been further carried forward while more focus is given to accountability. Various monitoring and evaluation systems for students, teachers, schools, and sub-national governments have been introduced, and most of the results are made available for the general public.

Overall appraisal of the current M&E systems

Sub-components of the Current M&E System

Educational Statistics Survey and Analysis System

Education statistics in the RoK are collected, analyzed and published by various relevant organizations with approval from the National Statistics Office (Statistics Korea). Currently, there are ten such education surveys, covering from basic to higher education, lifelong learning, private education expenses, special education, and school-to-work transition. Most of the surveys have been introduced in response to policy priorities (e.g., private expenditure on education). The results are stored in databases and are made available to education policy makers, researchers, as well as the general public.

The National Educational Statistics Survey is the oldest among the ten ongoing statistical surveys for which the Ministry of Education is responsible. It is commissioned to KEDI (Korean Educational Development Institute). The Ministry of Education has the legal right to ask schools to submit the information and can impose a fine for non-compliance. The data from schools are submitted to district offices of education via an online platform. The data are gathered in the metropolitan and provincial offices of education, and then submitted to KEDI which develops policy information for the Ministry of Education.

National Educational Information System (NEIS)

NEIS was developed in 2002 and launched in 2003. The system connects more than 10,000 primary and secondary schools to support the schools' daily administrative work. The system also provides services to different recipients, such as parents with the relevant information on their children,

universities on entry exam information, and education administration agencies on statistical and report information.

Edu-Fine System

The Edu-Fine System, launched in 2008, is an integrated financial management information system. The system is linked to education statistics and enables the users to systematically manage unit work, budget, financial accounting, settlement of accounts and financial analysis. Limited information for public use is also available on the website for purposes of accountability and transparency.

Performance Evaluation Systems

Student Assessment

Student assessment is conducted at the national level as well as at metropolitan and provincial level offices of education. Currently, the national assessment covers middle school year 3 students and high school year 2 students, evaluating Korean, Mathematics, English, Social studies, and Science. The metropolitan and provincial offices of education level assessment cover students from primary year 3 to middle school year 2 students for five subjects. The results of the assessment are used for quality assurance as well as for policy development. The schools with low achievement levels receive additional funding for providing learning support.

School Evaluation

Since 1996, schools are evaluated by their respective metropolitan and provincial offices of education. The main roles of the central government are: (1) setting the general directions of the evaluation; (2) developing and improving common indicators and providing training; and (3) supporting and monitoring the evaluation of metropolitan and provincial offices of education. The school evaluation varies from one education office to another, but a general evaluation procedure consists of a school self-evaluation based on the indicators developed by the central government and the evaluation made by school visits by the metropolitan and provincial offices. The frequency of the school evaluation is generally once every three years. The schools are categorized based on their performance. High-performing schools receive additional funding and their experiences are shared with others as best practices. Low-performing schools receive tighter monitoring and additional follow-up, generally by way of consulting. The evaluation results are returned to the schools for planning purposes. However, the information is not disclosed to the general public.

Metropolitan and Provincial Offices of Education Evaluation

Evaluation of the metropolitan and provincial offices of education was introduced in 1995. The evaluation is conducted by a team of external experts and stakeholders including government officials, researchers, educators, and parents. In recent years, the focus is on using the existing information from other sub-components of the M&E system discussed above. The results are widely disseminated through mass-media. Based on the results of the evaluation, local education bureaus receive financial incentives. Information on the good practices is also shared.

Teacher Evaluation

Teacher evaluation has been implemented in the form of manpower development since 1964. The RoK has given attention to teachers, with professionalism and a quality management policy plan as a main task of this evaluation. In order to overcome school education crisis and strengthen competitiveness, the Teacher Expertise Development Evaluation has been introduced. The updated teacher evaluation system introduced nationwide in 2011 includes teachers' self-assessments as well as evaluations by students, parents, and their colleagues. To reinforce participants' security and anonymity, the NEIS is used to conduct teacher evaluations, and the results are made available using the NEIS.

Overall Appraisal

The M&E system for education in RoK is highly developed and comprehensive. There has been a conscious effort in the country to integrate and streamline various sub-components of the M&E system. Although there are various institutes and organizations collecting and analyzing information, the National Statistics Office (Statistics Korea) and the Ministry of Education are ensuring the data quality and usage. Another important point to note is its focus on information disclosure for increased transparency and accountability. Most of the information is made available to the general public using the internet and mass-media. There is also a clear synergy across the sub-components of the M&E system and the data collected and analyzed are used to inform policy-making and implementation. In this context, it is fair to say that the M&E system in the RoK is moving towards the synergetic stage.

Overall review of the status of M&E systems in the Arab States

12. I.1 Status of M&E Systems in Education in the Arab States

I.1.1 Policies

M&E for the education strategies and plans does not have a long tradition in the Arab region. The first attempts at establishing applications for a tracking system started with the MDGs in 2000. Various mechanisms for collecting data and information for management purposes (education statistics, staff files, exams databases, budget operations) exist and operate in independently compartmentalized departments. Jordan is considered as a champion country which has adopted these applications in a holistic framework. In 2003, the Jordanian Ministry of Education started the implementation of ERfKE-I (2003-2008) and realized the demand for more M&E activities. Since 2010, M&E has been institutionalized as a second component of the ERfKE-II project (2008-2012).

The first draft of an M&E system in Palestine was produced in 2008 to set quality standards and performance indicators for the Second Five-Year Plan (2008-2012). Palestine gained solid knowledge from this first experience which raised demand for a more sophisticated M&E system for EDSP3 (2014-2019), focusing on Results-Based Management and service delivery programmes to enhance the quality of education at the school level and similar performance at all levels of management.

In Lebanon, M&E demand emerged in 2010 with the endorsement of the National Education Strategy (NES) by the Lebanese Cabinet. The NES consists of five main priorities under which there are ten development programmes. In February 2012, an M&E framework for the ten programmes for the ESDP was developed and approved.

Defining Egypt as being in an "Independent Stage" best describes the status of the M&E of the education sector there as different M&E systems are established and functioning, but are operating as separate entities to serve only within their confined scope. Planned policy actions need to be implemented to improve the effectiveness and efficiency of M&E systems, and which will secure its sustainability and bring the "results-based" precept into practice. The lack of an enabling environment, marked by a multiplicity of agencies, overlapping actions, bureaucracy, rigid inherited structures, resistance to change, and absence of updated M&E concepts at local levels are seen to be the main challenges.

I.1.2 Institutional and Organizational Conditions

In all four countries (Jordan, Palestine, Lebanon and Egypt), specific institutional arrangements have been set to carry on M&E to lead and coordinate M&E activities at all levels of management. However, the form and reporting lines differ from country to country.

Although Jordan started some kind of tracking system early in 2003, it was only in 2010 that the Ministry of Education re-structured the main tasks and responsibilities associated with the development of policies and strategic planning and established the M&E Division in the Department of Planning and Educational Research, as a part of ERfKE-II project. In addition to this, the external M&E is assigned to the NCHRD that reports independently to the Government Cabinet and disseminates results to the whole society.

In Lebanon, the MEHE approved and established a new unit in 2010 within the Education Sector Development Secretariat (ESDS). The ESDS coordinates with the MEHE departments and reports to

the Minister. The mandate of the ESDS revolves around the management and coordination of the Education Sector Development Plan (ESDP), specifically the projects funded by external donors.

In Palestine, an M&E Department was created within the General Directorate for Planning encompassing two divisions: the Monitoring Division which monitors the implementation of operational plans (inputs-outputs); and the Evaluation Division which reports on the achievement of the outcomes and results expected in the strategic plan (outcomes-impact). While both divisions are jointly concerned with providing the general framework for the monitoring and evaluation of the EDSP (5-Year-Plan) with a prime focus on enhancing educational quality, they share the tasks between data collection, on the one hand, and data interpretation and reporting on the other.

In Egypt, the organizational structure of the Ministry of Education is configured in the same way as other service sectors and as outlined by the public administration of the country where everything is controlled from the centre. The sector structure consists of a central body or headquarters and corresponding local administrations at governorates and districts. The sector management is supported by some autonomous bodies which also usually have central and local administrations. The central management is based in Cairo and connected to the local offices via different modalities of communication ranging from surface mail, telephone, and fax to intranets and other web-based communications. Poor modes of communications often needed to handle a large transfer of documents[87] have negative implications on timeliness of information and decision-making, especially at the operational level.

I.1.3 Leadership and Public Engagement

Results-based M&E systems are fundamentally related to the political and power systems of government. Since all four of these countries are supported by external donors to build their M&E systems, they can be used to help policy makers demonstrate the impact and outcomes to their respective stakeholders, and to gain public support. They all have political support from leaders of the Ministry of Education and technical and logistical support from some international actors.

The development of the system, in conjunction with the Strategic Plan of the Ministry and its adoption by senior management as well as at all levels down the line, attracts great interest in the M&E system by all partners and stakeholders at various levels, particularly the donor countries. However, since different international donor agencies have provided grants and loans as well as technical resources and expertise to the ministries to implement different parts of these programmes, the sustainability of the M&E system in these countries depends very much on the extent of continuous external budgetary commitments from donors (such is the case in Lebanon and Palestine). The culture of M&E is yet to be integrated as a regular part of the government budgeting process.

I.1.4 Human Resources

Designing and building a M&E system that can produce trust-worthy, timely, and relevant information on the performance of government projects, programmes, and policies requires experience, skill, and real institutional capacity. Although all the countries studied have established administrative structures dedicated to M&E activities, they still have a long way to go to strengthen their human resources capacity to cope with the increasing demand on M&E analyzes and reporting.

The M&E division or department consists of a small number of staff at the central level leading all the activities (three coordinators in addition to the Division's head in Jordan, one M&E specialist in Lebanon, and heads of the M&E Divisions and the Director General of Planning in Palestine). They

[87] Hardcopies need to be signed and stamped at every level before reaching headquarters.

rely on liaison officers for M&E in the Ministry of Education departments who manage various databases and management files (EMIS, exams, inspectorate, and budget operations), as well as the Directorates of Education in the field, who are seen to be acting on ad hoc assignments in parallel to their regular administrative tasks. The example of Jordan is worthy of mention as the qualified staff at the NCHRD there provide all the needed technical support to the MOE.

I.1.5 Utilization of Technology

Technology is an essential support for modern and effective M&E systems. It reduces staff time and administrative costs dedicated to M&E activities, and augments the soundness and accuracy of data processing and analysis.

The countries studied are using technology tools to some extent, but their levels of development are not uniform. Jordan has seriously invested in enhancing the use of ICTs in many aspects of its education system, including the M&E system, through the publication of M&E reports issued by the M&E Division on the MOE'S website. It also follows-up on programmes and projects through the electronic system in the monitoring unit.

In Lebanon, several education IT systems and databases exist but they are not integrated and they do not interface for exchange of data. The data collected through the surveys is uploaded manually. The Educational Centre for Research and Development(ECRD) manages EMIS, GIS and the Examinations systems, whereas the ESDS, which is responsible for the overall M&E of the education strategy, operates excel applications and databases according to ad-hoc information requests.

The Palestine situation indicates that all quantitative data for various indicators are compiled through existing databases using a computerized matrix linked with the computerized financial system. These computerized calculation mechanisms are used in transforming qualitative results to quantitative measures. The monitoring mechanisms for the school information system are computerized and placed on a web page to link with schools on an ongoing basis via the internet. The publication of the reports on the web page of the MOE consolidates public awareness.

In Egypt, ICT applications in planning, M&E and decision-making systems at all levels are not effectively interconnected.

I.1.6 Effective Uses

The ultimate effectiveness of M&E systems is the extent to which they are used to enhance three levels of results-based management: **evidence-based policymaking, evidence-based management,** and **evidence-based accountability**. M&E can provide governments with strong evidence to deliberate about the most cost-effective interventions to respond to high priority educational challenges based on the available information and indicators. M&E can also help them in managing the planned activities at different levels of governance by identifying the most efficient use of available resources and put in place appropriate corrective measures where needed to meet the targets and the expected outcomes. M&E finally enhances transparency and accountability by revealing the extent to which government has attained its desired objectives (with regular reporting within the government sectors and departments, as well as to the politicians and the civil society).

Evidence-based policy-making: M&E systems can help identify potentially promising programmes or practices. They can also identify unintended—but perhaps useful— projects, programmes and policy results. They enable governments and organizations to develop a knowledge base of the types of interventions that are successful, or more generally, what works, what does not, and why. Two examples shown in the individual county reports below provide evidence to show that government can benefit from a good experience in M&E to build solid plans and policies: Jordan has used the

results of ERfKE-I to develop ERfKE-II, and Palestine has used EDSP1 results to develop EDSP2. The annual reports from Palestine have had a great impact on drawing the attention of interested parties within and outside the Ministry to the weaknesses that have prevented the achievement of the desired results. The most significant impact that could be mentioned is the gradually increasing awareness of the conjunction between planning based on the evidence and the level of the implementation of the educational reform.

Evidence-based management: The M&E system is a crucial management tool for the public sector manager to achieve results and meet specific targets. Information on progress, problems, and performance are critical to a public manager striving to achieve results. M&E systems can help managers identify programme weaknesses and take action to correct them. They can also provide continuous feedback on the management process of monitoring and evaluating progress toward a given goal. Generally, regular meetings have been found to be organized at different levels of management to present interim progress reports and take corrective measures. In Palestine, for example, the M&E reports have been of utmost importance for the Policy Committee in the implementation of the annual plans and their impact on policies and instructions for implementation.

Evidence-based accountability: The information from an M&E system is important to those outside the public sector who expects results, want to see demonstrable impacts of government actions, and hope to build trust in government. External and internal stakeholders need to have a clear sense of the status of projects, programmes, and policies. The ability to demonstrate positive results can also help in gaining greater political and popular support. In Jordan, M&E reports are disseminated to decision-makers and all stakeholders, including posting on the website of the Ministry, and paper reports sent through official letters to stakeholders. In Lebanon, accurate data is made available through the ECRD to the public. Official executive level meetings are held at the ministry level for sharing the main findings of M&E outcomes. There are, however, no functional/operational accountability measures in place to reinforce evidence-based decision-making, which remains limited, case-dependent, and highly influenced by political considerations. The M&E system in Palestine has provided strong evidence on the extent of the expected achievement of targets across the three strategic goals: access, quality and management. Progress reports are available to the general public on the MOE webpage in Jordan and Palestine.

I.1.7 Clarity of Strategic Goals

M&E frameworks have been developed to be aligned with their respective education development strategy. The clearer and better defined the strategic goals to be achieved are, the easier is the way that they will be monitored and evaluated.

There are areas of common concern to all the countries, including education quality and governance. Quality education covers traditional policy issues such as teachers' development, curriculum review and learning assessment where definitions are more or less clear and performance indicators are commonly used. However, citizenship is an emerging issue introduced in the Lebanon framework that may pose certain difficulties in defining its scope and measuring its outcomes. As for governance, similar issues are of concern to all the countries, such as policy and planning, EMIS development, monitoring and evaluation. Jordan and Lebanon have a common concern with regard to school effectiveness. Focus is being made on school planning and management, self-evaluation and community involvement. Jordan intends to build a national school-based development system, which means developing relevant standards and guidelines.

In Egypt, the Ministry of Education has developed an ambitious sector strategy for pre- tertiary education. The goal is to provide Egyptians with quality and relevant education to cope with the

dynamic requisites of a learning–based society and knowledge-based economy, and to provide for greater accountability of outcomes.

Finally, each country has its specific focus areas for priority development: ECD, Special Education, and TVET in Jordan; ECD and ICTs in Lebanon; access in primary and secondary education in Palestine; and Egypt with a focus on providing quality pre tertiary education.

I.1.8 Relevance of Performance Indicators

Performance indicators are necessary means for assessing the various aspects of project, programme or strategy development inputs, processes, outputs, outcomes and impacts. When they are based on solid work on the data collection, analysis and dissemination of results, these indicators enable managers to monitor the progress of the implementation of activities, determine the shortcomings and take corrective measures to improve service delivery. Poorly defined indicators are not good measures of progress. The tendency to retain too many indicators, or choosing indicators for which there is no access to data sources, can make them costly and difficult to implement. For instance, the M&E Framework in Jordan defined 85 indicators to monitor and evaluate the achievement of the five strategic goals: 2 impact/long-term outcomes indicators; 37 intermediary outcomes indicators; and 46 outputs indicators. In Lebanon, 52 indicators have been selected to monitor and evaluate the achievement of the five strategic goals: 23 outcomes indicators; and 29 outputs indicators. In Palestine, 22 key performance indicators to monitor the three strategic gaols. In addition, two indicators have been identified related to education expenditure and per student cost in General Education, and 11 indicators for monitoring fragility in Palestine.

Desirably, there needs to be a trade-off between ''ideal'' and ''possible'' indicators, in order to settle on the optimal indicators for which data is accessible and will permit measurement.

I.1.9 Integrated Source of Information

Although all these countries have set up M&E divisions or departments, either within their directorates of planning or in separate secretariats as in the case of Lebanon, these systems are evolving at an independent stage where other M&E systems are also established and functioning, but are operating as separate entities to serve at their particular purpose (EMIS, teachers' management, inspectorates, budget management, students assessment, etc.). Moreover, very few indicators are covered by the established EMIS, which needs collective and coordinated efforts in order to collect all the necessary information for covering all the indicators from the respective management departments.

In Jordan, parallel to the M&E Division in the Department of Planning and Educational Research, and the NCHRD, are a range of other entities that undertake their own separate M&E activities at the ministry departments, directorates or school levels. Although some of them perform close to monitoring and evaluation functions, they operate in independent and uncorrelated ways (Division of Measurement and Evaluation in the Department of Examinations and tests; Department of Curricula and Textbooks; Directorates of Education; schools, etc.).

Whilst the M&E in Lebanon has been institutionalized by the creation of the Education Sector Development Secretariat, the ECRD remains the main source of information with its larger scope of competencies. These include, among others, undertaking educational research and conducting evaluations of the Lebanese educational system. These evaluations revolve round assessing and analyzing the performance of the students and teachers in the public and the private sectors at primary and secondary levels within both the general and the vocational and technical education streams. In addition, the ECRD issues an annual indicators brochure which includes indicators on students' performance in both the public and private schools, based on the information collected

from the schools and the results of the yearly national examinations. Other departments also undertake some kind of M&E (the Department of Pedagogic Orientation at the Directorate General of Education; the National Evaluation Body [Dispositif National d'Evaluation – DNE]). These systems feed into each other in a limited but not yet systemized/standardized manner and only on paper based requests.

In Palestine, the General Directorate for Planning of the MEHE houses the Department of Monitoring and Evaluation in charge of the overall M&E of all aspects of the EDSP. In addition, the Ministry of Planning and Administrative Development (MPAD) monitors education as a sector, and the Directorate General of Projects of the MEHE houses the Division for Monitoring and Evaluation of Projects. Beside the indicators covered in EMIS under the responsibility of the General Directorate for Planning, other indicators are reported by the Curriculum Centre, the Department of Assessment and Evaluation, Supervisors at the district level, the Division of Educational Technology, the General Directorate for Administrative Affairs, and the Division of School Health, through surveys and studies, reports of field visits, supervisors' reports, standardized achievement tests, and school reports.

As for Egypt, the growing ICT landscape, and devoting a priority programme in the sector strategy for the development of the M&E system for the sector may pave the way to reach the synergetic stage and coping with the post-15 agenda by 2017.

13. I.2 Policy Issues of M&E Systems in the Arab Region

The assessment of the EFA period 2000-2015 has shown that many Arab States are lagging behind in the achievement of EFA goals and some are on track only regarding the quantitative goals. Still, the performance of the rich Gulf States are startling on the improvement of education quality as evidenced by their students' performance in international assessment. The Arab region includes a diversity of countries and a range of approaches and progress towards M&E of education in a practical and systemic way. Despite the wide range of contexts there are some common issues including:

- Most of the countries are still relying on monitoring tools for the management of the inputs and activities. Evaluation of the outcomes and measurement of impact is yet to be established;
- Publishing and mediating the results of M&E into the different policy and advocacy spaces, including the policy, public and research communities seem to warrant better transparency in the dissemination of results, which is still to be developed in order to enhance accountability to stakeholders;
- There is a need for developing a practical and integrated systemic approach to collecting and making use of available data. The various data collection mechanisms are still operating independently for different management purposes; and
- There is a need for building institutional and organizational capacity for M&E, including regulatory frameworks and relationships with other agencies.

The most important challenge of designing and building an effective M&E system in the region, like other developing countries, is the incitation of the political demand for such a system. Lack of demand is rooted in the absence of a strong evaluation culture, which stems from the absence of performance orientation in the public sector. The demand for establishing effective M&E in the selected countries is however being generated thanks to external donors who request regular feed-back to establish the value of the money they invest. The experience capitalized from managing external funds has enabled these countries to develop and improve their M&E systems.

Other leverage for this development stems from the political transition in the whole region after the ''Arab Spring'', after which more and more voices are rising and calling for better transparency and accountability in managing public resources. At the same time, there appears to be resistance to change from the functionaries, especially because the activities of M&E will require them to do more work and engage more procedures for accountability.

Capacity-building is also needed to develop, support, and sustain these systems. Managerial staff are experiencing difficulty in identifying realistic and practical interventions to overcome the shortcomings of the education system. In particular, there is a disparity in the readiness of those in charge of the implementation of the M&E system at the school level.

Other challenges related to logistics and financial resources are also to be considered. These include, for instance, the lack of appropriate resources to implement the M&E system, particularly for qualitative activities that typically require high cost; and weakness in communication and dissemination of information among stakeholders in the field to enable them to identify specific targets for development.

14. I.3 Key Findings and Recommendations

A variety of lessons learned have been generated by this regional M&E review conducted in Jordan, Lebanon, Palestine and Egypt. All of these countries have accumulated substantial experience in designing, developing and managing their respective M&E systems. At the same time, they still lack some institutional, human, and technical capacity to effectively sustain these systems. This is, however, not an insurmountable obstacle. Training and technical assistance can be provided to remedy these difficulties. But no amount of training and technical assistance can substitute for indigenous political will. Often the political challenges are more difficult to overcome than the technical ones. Highly placed political champions and strong, sustained political leadership are the key ingredients in an effective M&E system.

I.3.1 Political and Institutional Leverages

- The most important challenge to designing and building an effective M&E system in the region, as in other developing countries, is the incitation of the political demand for such a system. Lack of demand is rooted in the absence of a strong evaluation culture, which stems from the absence of performance orientation in the public sector.
- Despite a relatively short period of time since the creation of dedicated M&E units in the respective ministries of education, many tools have been developed to follow up on activities, projects and programmes. However, these targeted activities, projects and programmes need further clarification and awareness about the strategic importance of M&E. They also need to obtain required support from senior management levels.
- Other leverage for this development stems from the political transition in the whole region after the ''Arab Spring'', which ignited new social debate around youth, social justice, employment, etc. Highly placed champions who are willing to assume the political risks of advocating for results-based M&E are therefore needed. This becomes even more challenging with the emerging abstractive quality dimensions, such as citizenship and sustainable development that are yet to be clearly defined, monitored and evaluated. There is a need for the existing M&E systems, to adapt to the emerging challenges, where all monitoring mechanisms are integrated into a system-wide framework to lead to a holistic evidence-based decision-making mechanism.
- Subsequent to the emerging issues of the Syrian crisis, together with other factors, the M&E in the education system is moving towards a national multi-level scale, requiring close collaboration between several entities of the government. Institutionalization of cross-ministerial M&E functions is highly needed.

I.3.3 Human and Financial Resource

- Capacity building is also needed to develop, support, and sustain these systems. Officials need to be trained in modern methods of data collection, monitoring and analysis. Managerial staff experience difficulty in identifying realistic and practical interventions to overcome the shortcomings of the education system. In particular, there is a disparity in the levels of readiness of those in charge of the implementation of the M&E system at the school level.
- There is a need to increase the level of awareness about the determinants of the outputs and results and their shortcomings. Promoting awareness provides the opportunity to make better decisions in relation to the design and preparation of the right interventions through better choice of instruments of data collection, and in-depth results analysis, thereby enhancing the quality of monitoring and evaluation. In most cases, data analysis focuses mainly on adding numbers and calculating percentages. There is a need to conduct deeper quantitative and qualitative analyzes, so as to extend the analyses beyond output level and to include the level of results, ensuring that M&E systems address the result levels (outcomes and impacts), including those that are essentially qualitative.
- Other challenges related to logistics and financial resources are also to be considered. These include, for instance, a lack of appropriate resources to implement the M&E system, particularly for qualitative activities that typically require high cost; and weakness in communication and dissemination of information among stakeholders in the field to identify specific targets for development. Communication and coordination within and between government agencies and departments and among donors are equally important.

15.

I.3.4 Technical Tools and Methods

- The EMIS in each country gathers a huge amount of data, but it covers a limited number of necessary indicators designed by the M&E frameworks. Therefore, in-depth review of EMIS data and tools is required, as planned in Jordan, so that it becomes more responsive to key performance indicators designed in the M&E framework.
- Data and information exchange between different departments managing respective databases are still being operated through manual tools or ad-hoc applications. There is a need to build an integrated M&E system linking all required data sources in a systematic and automatized process.
- A large volume of data is being mobilized from the implementation of the M&E system at all levels. It is necessary to provide evidence of the validity and reliability of these data. There is no evidence to support the accuracy and quality of the data, which prevent determination of the extent of its importance and usefulness in the process of decision-making or policy analysis.
- There is a limited use of the results of the M&E for policy design and development. It can be concluded that there is a shortage in the capacity of monitoring and evaluation in general at the central level as well as at district and school levels. This requires the creation of sub-systems for M&E in the departments of the ministry and directorates of education and schools. These will supplement the national system of M&E.
- Usage of the timely and reliable education statistics, information and indicators provided by EMIS to support educational planning needs to be improved. M&E, decision-making, and international comparisons need to be made systemic and not remain on an ad hoc basis.

I.3.5 Other Emerging Issues

There are two major common emerging issues to many countries that would shape the necessary adaptation of the existing M&E systems. The first is specific to those affected by continuous or new conflicts of various natures (political, religious, and ethnical). These involve Palestine, Lebanon, Iraq, Syria, Libya, Yemen, Tunisia, Egypt, and to some extent Jordan. As a result, the overwhelming

movement of population (refugees, IDPs) may affect the design and development of new education strategies and approaches. The second is related to the new political atmosphere in the whole region brought about by the ''Arab Spring''.This may also require in-depth curriculum review to integrate emerging education notions, such as citizenship, education for peace, cultural dialogue and 21st Century skills.

Any effective M&E system should integrate all these dimensions in order to be of use to politicians in designing responsive policies and interventions, to managers for monitoring and evaluating the planned activities, and to all stakeholders and the society as a whole for providing evidence-based accountability and transparency. There is a need then to further strengthen the M&E system to provide a deeper evidence base for management and decision-making and help build a culture of evaluation across the whole organization. System-wide regular evaluations should be carried out as part of the new M&E approach, based on the main evaluation criteria: relevance, coherence, sustainability, effectiveness, efficiency and equity.

Subsequent to the emerging issues of the Syrian crisis together with other factors, the M&E in the education system in Lebanon and Jordan is developing to a national multi-level scale requiring close collaboration between several entities of the government. Institutionalization of cross-ministerial M&E functions is highly needed. Thus, the recommendation is that an M&E function/unit be established at the governmental level to be responsible for M&E reporting on development projects. A cabinet level intervention to ensure comprehensive M&E functions will also have the needed access to the concerned ministries for each monitoring and/or evaluation case for relevant and comprehensive data collection and analysis. This will support more good governance in decision-making at the cabinet level, and will complement the previous efforts to establish M&E entities within the ministries, including the MOE, using a top down approach initiated as in Lebanon..

In the case of Egypt, there is a need to institutionalize a country level observatory hosted by an independent agency such NCERD or NAQAA, convened of representatives of M&S systems and other involved agencies such CAPMAS, and MOF. Such an observatory would not replace the existing M&E systems, but rather develop a systemic mechanism to ensure that different systems mutually reinforce each other, create synergy and facilitate performance of the education system in a holistic and comprehensive manner.

In Egypt, again, M&E of the education sector will not be completed without capturing the interaction of the supply side of the reform formula. Such interaction could be monitored by the household surveys administered by the CAMAPS. Unfortunately, there is no system within the education sector in charge of integrating the results of such surveys with the outputs of other systems, such as school mapping or EMIS. However, the recommended observatory could take care of such a task. Similarly, there is need for guaranteeing good governance via community participation and engagement of all stakeholders in the educational process and in the support of decision-making within schools.[88] Expanding the use of ICT applications in planning, M&E and decision-making systems at all levels need to become interconnected and function in a coordinated and synergetic manner providing comprehensive information in an optimal and holistic manner.

Developing the capacity of the M&E department staff is also of high priority in order for them to be able to manage the M&E system with high efficiency. Providing capacity-building opportunities, along with various incentives is essential. The Ministry of Education in Palestine is currently implementing a capacity-building plan in evaluation “as a function”, which means that the evaluation process is a relatively new practice carried out by the ministry. The ministry is currently

[88] Sector strategy2013-2017

seeking to develop a guide for evaluation and a training model with support from ICON Institute. In other countries, such capacity may mean skills of data analysis, as in the case of Egypt where the capacity of NCEEE/NCERD to conduct and analyze national educational surveys and monitoring evaluation programmes using sophisticated analytical methodologies needs strengthening.

Country Case Studies

In this section, in-depth information from four selected countries is presented to demonstrate different stages of development of an M&E system in education. The countries have been selected on the basis of: (1) geographical distribution (three from the Middle East region and one from North Africa); (2) recent trends in education policy development related to M&E; and (3) the availability of literature and data.

16.

Jordan

The Status of M&E Systems in Education Sector

The extension of the monitoring and evaluation capacity of the education system has emerged in the last few years as a major priority for the Ministry of Education in Jordan. This concern and perceived need are inextricably linked to the essential requirement for a well-developed policy and strategic planning capacity in the Ministry based on data and evidence from both quantitative and qualitative sources.

Experience of the Education Reform for the Knowledge Economy Programme (ERfKE I) clearly indicates that there is a need for developing an internal M&E system within the MOE departments for the daily monitoring of activities and early warning on the implementation track, and for strengthening the external M&E system to make it grow from being an independent institution to one that can provide more strategic feed-back on outcomes and impact of the education strategy. Regardless of how the M&E activities were conducted in the past, the Ministry now realizes the demand for more M&E activities, particularly internal M&E activities, as crucial to the implementation of the second phase of the ERfKE Project.

The organizational review of the Ministry of Education in 2010 re-structured the main tasks and responsibilities associated with the development of policies and strategic planning under the supervision of the Department of Planning and Educational Research. Within this Department was created a Division of Monitoring and Evaluation (M&E).

Internal M&E is undertaken by the M&E Division, which seeks to institutionalize the monitoring and evaluation system in order to achieve the strategic objectives of the Ministry and its plans, including partnerships with educational departments and donors through:

- Follow-up and evaluation of the schools development programme and preparation of annual reports at all administrative levels (ministry, directorate and school);
- Follow-up of ERfKE project and preparation of bi-annual reports;
- Implementation of selected evaluation studies;
- Follow-up of the Strategic Plan of the Ministry of Education and preparation of an annual report; and
- Follow-up of all the programmes and projects on the electronic system and preparation of monthly reports.

The M&E Division consists of three coordinators in addition to the Division's head. They all have the potential to conduct monitoring and evaluation activities and two of them have received intensive

training in monitoring and evaluation (80 hours). There are 13 liaison officers for M&E in the Ministry of Education departments and 45 liaison officers in 42 Directorates of Education in the field.

External M&E is undertaken by the NCHRD (National Centre for Human Resources Development), which has high capacity to conduct national M&E activities. It benefits from consistent support from the USAID for the development of its performance. The NCHRD has conducted evaluation studies characterized by high quality related to the implementation of the Education Reform for Knowledge Economy (ERfKE), and many of the other studies related to human resources in general. The Memorandum of Understanding between the two parties (NCRD and the Ministry of Education) confirms that the staff at NCHRD are qualified to work as mentors and trainers to the staff of the Ministry of Education in the process of capacity-building.

Parallel to the M&E Division in the Department of Planning and Educational Research, and the NCHRD, there are a range of other entities that undertake their separate M&E activities at the ministry department, directorate or school levels. Although some of them are close in monitoring and evaluation functions, they operate in independent and uncorrelated ways. These include:

- *Division of Measurement and Evaluation in the Department of Examinations and Tests*: It plays an important role in the assessment of learning outcomes and the development of standards for the quality of the education system. Examples of its achievement include the national exam to assess the quality of education; analysis of learning skills in basic education; and learning achievement in Arabic, English, mathematics and science for eighth grade students. The evaluation reports provide an analysis of the evaluation of the performance of each directorate and school, and then compares them with the performance of the rest of the country.
- *Department of Curricula and Textbooks:* Gathers feedback from students, teachers, school heads and parents about the process of curriculum development. Feedback is also gathered from stakeholders via phone, fax, and e-mail.
- *Directorates of Education:* Directorates organize field visits to schools, and take advantage of the visit reports for school improvement and development.
- *Schools:* Evaluation of teachers (classroom observation), follow-up of curriculum plan, and analysis of exams results, follow-up of teachers' training and school partnerships with local environment.

An M&E Framework was developed in 2010 for ERfKE II providing for the measurement of compliance with stated operating mechanisms within the MOE in terms of current structures, functions, processes, roles and responsibilities. The M&E systems in the Ministry of Education of Jordan have evolved as follows:

- Since 2000, the MOE has adopted the application of a tracking system through quality management ISO 9001, in order to raise the level of administrative services and the teaching-learning process, and to consolidate the principles of institutional efficiency in delivering educational services. The Directorate of Quality Assurance has been given the charge to monitor the implementation of the system at the MOE and the Directorates of Education levels.
- In 2003, when the MOE started the implementation of the Education Development Reform towards the Knowledge-based Economy (ERfKE-I), an agreement was reached with the National Centre for Human Resources Development (NCHRD) for a follow-up and evaluation of the project and implementation of related studies.
- In 2010, in addition to an understanding with the NCHRD for monitoring and evaluation (external) within the implementation of the (ERfKE-II), M&E has been included in the second component of the project "policies and monitoring and evaluation" in order to institutionalize monitoring and internal evaluation in the Ministry of Education.

The M&E system is becoming fully functional by the creation of an M&E Division within the Department of Planning and Educational Research, and provided with appropriate staff. There is, however, no harmony and coordination between the various bodies mentioned above responsible for data collection. The M&E Division in the Planning Department is the only source that provides effective and credible reports.

The M&E system interacts partly with the Educational Management Information System (EMIS), where some of the required data is collected through this system. An ''Open EMIS'' is under development, with UNESCO assistance, which will link school data with information sources within and outside the Ministry of Education.

Lebanon

The Status of M&E Systems in the Education Sector

The M&E systems in Lebanon, as per their status up until 2014, consist of five main types:

- The first type falls within the M&E roles undertaken by the Educational Centre for Research and Development (ECRD). The ECRD is an autonomous governmental institution that functions under the trusteeship of the Ministry of Education and Higher Education (MEHE). The tasks of the ECRD include, among others, undertaking educational research and conducting evaluations of the educational system in Lebanon. These evaluations revolve around assessing and analyzing the performance of the students and the teachers in the public and private sectors at primary and secondary levels within both the General and the Vocational and Technical Education streams. The ECRD organizational structure includes a Pedagogical Research Office (PRO). Within PRO, operate units that undertake several M&E related functions, such as the Planning Unit (includes school mapping), the Evaluation Unit and the Statistics Unit. These units coordinate closely with other units outside the PRO, such as the IT Unit. The M&E related outputs generated by these units are both quantitative and qualitative. They include the yearly statistics report, presenting information on students, teachers, school administrative staff and school buildings. Another ECRD output is the yearly school mapping report with recommendations made to the Minister of Education on the need for new schools or for closing existing schools based on pupils' distribution in the educational zones defined by ECRD, that is, based on schools catchment areas and other criteria. In addition, the ECRD issues an annual indicators brochure including indicators on students' performance in both the public and private schools based on the information collected from the schools and the results of the yearly national examinations.
- The second type is the one undertaken by the Department of Pedagogic Orientation at the Directorate General of Education within the Ministry of Education and Higher Education. The tasks of this department include the evaluation of the teachers' performance within the General Education stream. They have a taskforce of teachers' performance inspectors, whose annual mandate includes visiting all schools and making observations about the instructional methods used by the teachers. They fill paper standard forms in which they reflect their observations and submit them for taking corrective measures at the ministry level. Their tasks are not automated. In 2011-2012, the USAID funded project D-RASATI initiated the work on supporting MEHE for developing a new tool to be used by the observers that is more sophisticated and more in-line with the new learner-centred methods of teaching. As a result, in 2012 a Professional Growth and Reforms Support System (ProgRESS) tool (Standards-based Classroom Observation for Lebanon) was developed and piloted. This tool aimed at improving the way that teacher professionalization was being framed, discussed, operationalized and evaluated. The activity included creating a database to which the information collected by the observers could be uploaded. This tool was planned for official adoption.
- The National Evaluation Body (Dispositif National d'Evaluation - DNE) undertakes the third type of M&E. It is externally funded through international NGOs and is more focused in terms of

scope of operations, which coordinates with ECRD to conduct specific studies for evaluating teachers and students' performance in specific areas. Means of coordination consist of bureaucratic requests sent by the DNE to the ECRD whenever a request or agreement is reached for undertaking a pedagogical evaluation related to specific educational subjects.

- The fourth type relates to the level of development of Lebanon in the field of International Large-Scale Assessments (ILSA). In the last ten years, Lebanon has participated in a number of ILSA exercises, including PASEC (2009), and TIMSS (2003, 2007, and 2011). Lebanon is taking concrete steps to participate in PISA 2015 and TIMS 2015.
- The fifth type of M&E is one of the most important because it sets the ground for proper development of the above mentioned four types. This M&E system is related to the institutionalization of the M&E functions aiming at monitoring and evaluating the efficiency, effectiveness, relevance, impact and sustainability of education development programmes for strategic and programmatic evidence-based planning and budgeting. In 2010, the Ministry of Education and Higher Education approved and established a new unit for M&E within the Education Sector Development Secretariat (ESDS). This unit's staff and projects were funded by external donors and it was envisioned to become integrated within the ministry structure and budget. The ESDS coordinates with the MEHE departments and reports to the Minister of Education. The mandate of the ESDS revolves round the management and coordination of the education sector development projects, specifically the projects funded by external donors.

In addition, other bodies also undertake some kind of M&E (general education), including:

- The Central Inspectorate, a public body reporting to the Government's cabinet, holds some monitoring responsibilities related to the educational and financial performance of the education sector. This body performs auditing functions rather than monitoring and evaluation functions.
- The Vocational and Technical Education (VTE) stream is managed through the Directorate General of VTE. Historically, a separate ministry used to manage this stream. Subsequent to the cessation of the Civil War hostilities in 1990, the responsibility for the delivery of education services in Lebanon was assigned to several governmental agencies and was transferred, in the year 2000, to a single Ministry of Education and Higher Education (MEHE), which is the current governing body for the sector. However, this stream, due to this historical background, is less equipped at the level of MEHE and the ECRD, with limited expertise and mechanisms related to this sector available at the MEHE headquarters.

In 2010, the Lebanese cabinet endorsed the National Education Strategy (NES) which was developed and submitted by the Ministry of Education and Higher Education. The NES consists of five main priorities under which ten development programmes have been identified. Different international donor agencies provide grants and loans to the ministry to implement different parts of these programmes. The fifth priority of the NES, "Governance of Education", has been supported by an institutional development programme whose objectives, as stated in the strategy, include "assessing the effectiveness of sector development programmes through indicators and specific data".

Upon the endorsement of the National Education Strategy in 2010, the UNESCO Beirut Office provided technical support to the Ministry of Education and Higher Education efforts in improving the governance priority objectives by developing an M&E framework and tools for the implementation of the Education Sector Development Plan (ESDP). As a result, by February 2012 an M&E framework for the ten programmes for the ESDP had been developed and approved. It included, where applicable, detailed implementation reference sheets, targets and training materials as needed for the operationalization of this framework.

In March 2012, a World Bank Loan for a Second Education Development Project (EDPII) was approved. It included a component for Education Sector Policy Development and Management. This component aimed at organizational strengthening to streamline the operations of MEHE in the management of the reform process and in effective donor coordination, as well as the measurement of reform outcomes, outputs and impact at all levels through effective monitoring and evaluation of project and reform activities. ESDPII gave special focus on institutionalization of M&E activities in order to provide a more effective structure for carrying out M&E focused on results of programme delivery and timely feedback to stakeholders, in addition to the translation of data into information for MEHE policy and planning. In January 2014, the Minister of Education issued a decision to form a technical taskforce to prepare an action plan for implementing the M&E component of the ESDPII. Efforts for institutionalization of M&E of development projects are still ongoing.

Palestine

Status of M&E Systems in Education Sector

The Ministry of Education and Higher Education in Palestine (MEHE) has adopted two levels of M&E of the plan:

- The first level consists of monitoring the implementation of operational plans through the annual report on the progress in the execution of the planned activities, the outputs, and the budget.
- The second level of M&E reports on the achievement of the outcomes and results expected in the strategic plan.

The system is considered to be an effective tool that gives an early warning in case of any shortfall in the implementation of the plan. This allows managers to have the opportunity to modify the path at the right time, through the assessment of a number of key performance indicators as outlined in the Performance Assessment Framework (PAF) for each of the Education Development Strategic Plan (EDSP) goals. The PAF was developed by the MEHE with financial and technical assistance from donors and international consultancy, in consultation with different departments of the Ministry. The overseeing and management of its implementation are the responsibility of the Directorate General for Planning through the Department of Monitoring and Evaluation.

The Department of Monitoring and Evaluation, in addition to its traditional mandate for managing the Education Information System (EMIS), also takes the central coordinating role in respect to the overall M&E of all aspects of the EDSP. Where reporting requirements for projects based on bilateral agreements between the MEHE and individual donor countries require specific reporting formats, these are annexed to a main report that needs to follow the reporting procedures of the MEHE and the appropriate donor country mechanisms. Its main tasks are to monitor and evaluate the implementation of the EDSP, to assess to what extent the goals and results have been achieved, and to provide guidance on how to improve future implementation. In particular, it has to provide advice and guidance to the department in the following areas:

- implement and continuously revise the concepts and policies for M&E within the MEHE, with a prime focus on enhancing educational quality;
- collect, process, interpret and evaluate data vis-à-vis timeliness and agreed-upon milestones;
- measure the achievement of the KPIs vis-à-vis the EDSP;
- coordinate M&E activities undertaken by different departments of the sub-sectors;
- provide information on M&E outcomes as reference materials and additional resources for Joint Annual Reviews (JARs) and for future development initiatives of the education sector;
- prepare periodic reports regarding the implementation of the EDSP; and

- strengthen the framework of the Sector-wide Approach (SWAp) through harmonization, both internally and externally.

Other ministerial bodies have their own M&E systems for education. The Ministry of Planning and Administrative Development (MPAD) monitors education as a sector, with the prime focus being on monitoring disbursement of funds (in comparison with other sectors) vis-à-vis the involvement of donor countries and NGOs. The MEHE, like other sectors, reports regularly to MPAD on the progress towards each EDSP goal linked to a categorized expenditure. MEHE provides a semi-annual narrative report about the implementation of all outputs of the AWPB (Annual Work Plan and Budget), identifying progress and challenges. Every six months, it also provides procurement progress reports on the basis of the Procurement Plan. This process enhances the evidence-based accountability towards the use of scarce financial resources.

The Directorate General of Projects of the MEHE houses the Division for Monitoring and Evaluation of Projects, which has specific responsibility to monitor the implementation of projects carried out in cooperation with individual donors.

The M&E system relies mainly on the existing databases sub-systems to monitor goals and results of the EDSP2 key performance indicators, such as EMIS for access data, the assessment and evaluation department for student achievement data, and human resource database for the qualification of teachers.

The M&E reports are published annually both for the central MEHE covering the whole education system, as well as for each district, with a strong focus on school, teacher, and student performance. Each annual report is broken down into a district level M&E report, and schools and districts are requested to give their feedback concerning the type and size of interventions to be adopted to raise the results on the quality indicators.

Since the beginning of the EDSP 2008-2012, the M&E system has been providing strong evidence on the extent of achievement of the expected targets across the three strategic goals: access, quality and management. The implementation progress reports play a particularly crucial role in the annual planning and budgeting cycle and constitute an important source of information outlining key challenges and possible responses in the form of new interventions in the education system. The annual reports have had a great impact in drawing the attention of interested parties within and outside the ministry to the weaknesses that have prevented the achievement of the desired results. However, the achievements in some specific areas, like on quality, still need more work. Suitable mechanisms have been proposed to ensure the integration of the results and recommendations of the M&E reports in the annual planning processes at all levels (bottom-up and top-down). The ministry has institutionalized its main procedures and operations in the form of three Operations Manuals: Programme-Based Planning and Budgeting–Developing Annual Work Plans and Budgets; Financial Management and Relations with the Ministry of Finance; and Evaluation. All three manuals provide step-by-step instructions on how to implement and sequence essential internal operations, including working and decision-making steps. The manuals are updated annually in terms of new guidelines or additional lessons learned. The manuals further deepen the process of building a more robust implementation and accountability system to deliver better educational results across all sub-sectors.

The most significant impact that could be mentioned is the gradually increasing awareness being established in conjunction with planning based on the evidence and the level of the implementation of the educational reform. The Management and Administration component has made significant progress during EDSP 2. A high priority is given to the management reform in EDSP3 starting in 2014

to fully align and institutionalize the new direct service delivery programme structure with the organizational structure and operations of the MEHE. Yet, leaders and stakeholders still need a deeper understanding of the activities' implementation mechanisms to be able to know how effective these activities are, their sustainability and their relevance to the educational needs.

The development of the M&E system has been supported by institutional and organizational measures that have provided the enabling conditions for its success. The development of the system in conjunction with the Strategic Plan of the Ministry EDSP2 is a result of political commitment for results-based management. This has been operationalized by the creation of the Department of M&E within the General Directorate of Planning, which is in charge of monitoring the implementation of the strategic plan. This department has been given full independence and authority to disseminate the M&E reports and results in total transparency.

Egypt

The Status of M&E Systems in the Education Sector

The Government of Egypt is exposed to substantial pressure from expectations of the community after the revolution of the 30th of June 2014. The new Constitution (2014) supports such expectations by affirming the right of every citizen to have equitable chance of quality education and by allocating at least 4 percent of GDP to education. The Government has responded by developing the Sustainable Development Strategy (SDS), which aims at promoting human development through two main pillars, namely, education and health. By 2030, high quality education, accessible to all (with no discrimination) within an effective institutional system and focusing on technologically capable learners is targeted to be provided. This education system will contribute to building an integrated citizen, encouraged to reach his/her potential, and which will produce an individual who is confident, enlightened, creative, responsible, pluralistic, and able to interact competitively with regional and international entities.[89]

The current review has analyzed the situation of the M&E policies, practices and different sub-systems to explore the strengths, weaknesses, opportunities, and challenges, and has described specific implementable recommendations to complement the sector strategy, institutionalizing the M&E as an element of the organizational chart, or as a stabilized mechanism at top of the list to secure the capacity-building of the M&E system.

Recommendations have been made to break the status quo and improve the M&E system to enable it to move toward the synergetic stage, to move from traditional compliance to a performance-based M&E model. Reforming the M&E systems faces the typical challenges, namely, rigid inherited bureaucracy, resistance to change, and lack of a competent leadership to guide and motivate such reform. Other specific challenges have been taken care of in formulating the recommendations to make them implementable.

The sector performance (2000-2013) in terms of the EFA indictors was assessed by the NCERD (National Center for Educational Research and Development) , .[90] The report showed that the sector experienced noticeable achievements except in the cases of early childhood and adult education, which are targeted in the current sector strategy. The report has further revealed the absence of systematic monitoring of the EFA goals. However, it presents a good example of integration of

[89] Egypt Economic Development Conference. Sustainable development strategy, Egypt's vision 2030, and medium term investment framework 2014/2015-2018/2019, 2015 Sharm El Shiekh, Egypt.
[90] Commissioned by Cairo UNESCO Office.

research capacities (NCERD) and technical capacities of MOE departments in producing national monitoring reports.

The need of the education sector to re-structure the M&E body is more crucial than ever, not only as an indispensable requisite of good governance and accountability which shapes the new strategy but, also to ensure effectiveness, efficiency and proper utilization of invested resources. Stressing the importance of quality assessment, and monitoring and evaluation systems was one of the recommendations for post-2015.[91]

An Overall Appraisal of the Education Sector Management and M&E Systems

In terms of governance and reporting, local administrations are technically suppose to report to the Ministry of Education which is in charge of polices, curricula, textbooks, teaching material, training, ICT installations, and related matters, while administrative responsibilities, such as teacher recruitment and deployment are managed by the Governor who by law has the same authority of the President within his Governorate. No serious coordination problems have been observed so far except in late nineties when the Minister of Education decided to restrict school entry age to "not one day less than 6 years", and one of the governors exercised his authority to allow children of five and half years to join the system. This had considerable implications in equity and created some inconsistencies in education statistical reporting.

It is worth mentioning that each governorate and autonomous body negotiates/receives its budgets and reports expenditures directly to MOF, with no involvement of MOE which creates an issue for monitoring the sector.

As the country is moving toward decentralization of administration, the Ministry of Education has adopted the same policies in the sector strategies which have been the traditional course for implementation. The Minister of Education has delegated some of his responsibilities to the governors, such as, management of school feeding, and the installation and maintenance of ICT which are charged to the governorates. Most of the school fees are received and managed by the schools. However, the repercussions of such delegations in terms of M&E are issues to be addressed.

Evolution of Different M&E Systems for Education

Stated briefly, the M&E system in Egypt, in its evolution, has witnessed stages that have included an input-oriented system (consisting of school record keeping, EMIS, school mapping, technology development, teacher management information and financial management information), process-oriented systems (consisting of school inspection and evaluation systems, teacher evaluation system and teachers' training system) and an output-oriented system (examination system, student assessment system and quality assurance and accreditation system).

Sector Strategic Plans

As in several other countries, M&E in Egypt has always been part of almost every education sector plan, initiative, project and programme. The past sector strategy and the current one consist of specific priority programmes to improve the M&E at policy, organizational, administrative, and technical levels in order to provide feedback for further development of the reform, however, the job of improving the M&E has yet to mature for many reasons.

[91] The Arab States Regional Conference on Education Post-2015, 27-29 January, 2015 Sharm El Shiekh, Egypt , Conference Report (DARFT).

One of the good practices derived by the 2007-2012 Strategic Plan was the development of National Education Indicators (NEIs) framework which was created through a national collaborative effort of numerous individuals and organizations affiliated to the Ministry of Education and with international technical assistance.

Key Factors that have contributed to the Effectiveness and Efficiency of the Existing M&E System

- Institutional and organizational conditions;
- The use of technology;
- Proper use of resources;
- Interest and commitment of stakeholders;
- Partnerships including involvement of non-state actors and development partners;
- Production chain.

Possible areas for improvement in M&E framework and components would consist of improving the effectiveness and efficiency and securing the sustainability of the M&E systems.

Overall Review of the Status of M&E Systems in Africa

17. I.1 Background

In all of the three case studies from Africa, namely Ethiopia, South Africa and Zimbabwe, it was found that the capacity to conduct effective M&E activities is weak. This feature is common across all education stakeholders, including head teachers, government officials, parents and students. Attempts to strengthen this system through training on monitoring and evaluation activities are seen as common occurrences. Unfortunately, newly trained ministry and school staff are targeted by private sector players who desire to hire them with offers of more attractive remuneration. In some cases, where training does occur, it is not consistently administered or even sustainable, especially in cases where the training is funded by external partners.

Monitoring and Evaluation activities are increasingly moving towards reliance on Information and Communication Technologies (ICT's). While this is, no doubt, a step in the right direction of modernity, it suffers the disadvantage of being an incomplete step because still there are ministries that cannot afford the cost of investing in ICT's for M&E across all their offices. Even though, in the long run, the purchase and use of ICT's can prove to save funds through efficiency, setting aside the initial outlay needed is diffiuclt and doing so may prove to be of little use to the education system if such acquisition and use of ICT's is not supported simultaneously by the provision of the needed training to the staff and integration across all sectors. This problem of resources extends further to the funding needed for continuing the M&E activities, and the recurring expenditures needed to meet the requirements for salaries of M&E personnel and vehicles for travel, etc.

Finally, Monitoring and Evaluation are slowly starting to gain importance as vital parts of the planning and decision-making processes. In the past, the tendency has been for M&E activities to be treated as a routine part of the plan operations with the simple expectation of routinely monitoring the inputs and outputs. However, now the Ministry of Education, as well as the public at large, have started asking for more and more data accountability and evidence-based decision-making. Had it not been for such a demand, there would have been very little understanding on the part of policy makers of the importance of the benefits of Monitoring and Evaluation for making the right decisions. Stand-alone units within Ministries and whole departments are now slowly being dedicated to meet this demand.

18. I.2 Role of M&E System in Monitoring the Performance of the Education Sector

This review attempts at conceptualization of the M&E system in education with a holistic approach in order to enable it to monitor the performance of the education system. This would be with built-in mechanisms for ensuring accountability of information, and supported by robust evidence. Such a strong and reliable mechanism should help policy makers, as well as the public, to bring about improvements to the educational processes and achieve the desired results. The review further looks at some systemic aspects and sector-wide perspectives of how different M&E systems and components interact among themselves and the extent to which they are aligned with policy needs so as to provide the relevant information for making informed policy decisions.

The basic conceptual approach here is that Monitoring and Evaluation is a multi-faceted and highly iterative process involving widespread engagement, often with the same people and/or systems. It may be construed as an exercise on continuous learning and putting in to practice what is learned. In other words, the results of any Monitoring and Evaluation exercise should feed back into the M&E process so as to make it better, more scientific, valid, more responsive and, thus, more useful to all the stakeholders. In the quest to assess any programme or project, policy or plan, there are a number of things that need to be considered. First, there are the issues of capacity, roles and integration, and second there are the aspects of culture, quality of results obtained, comparison, transparency, accountability and the reliability of information. These need to be balanced optimally. Particularly relevant in the African context is capacity. The idea is to focus on capacity with the intent to build. In the absence of such capacity, the M&E exercise runs the risk of ending up merely as an obfuscating mass of data which cannot be put to any practical use for the improvement of policy or programme implementation.

Thus, the quality of data collection and the results analyzed therefrom gain criticality in the process of M&E. Effectively using the results of Monitoring and Evaluation initiatives is one of the more serious challenges in the Africa debate. As the information age on the continent continues its upward trajectory, the concept of big data is beginning to gain traction as already evident in other developing countries. Africa has the potential to leap frog from simple data processing activities to using high level analytics to process the vast amount of data that are available. Separating politics from results is also crucial if there is to be any impartiality in the acceptance and use of the products of M&E activities. Making results widely available helps to create a culture of accountability which is one of the main tasks of M&E.

19. I.3 Information Systems supporting M&E of Education

I.3.1 Inputs

M&E systems that intend to monitor more of the input related factors in the education sector are:

I.3.1.1 School Record Keeping

School records are a unified and comprehensive collection of documentation concerning all services provided to a student which may include intake information, evaluation(s), assessment(s), release of information forms, individual learning plan and written notes regarding the student.[92] School record keeping system is a first priority area for the fundamental reason that the school is the smallest albeit the ideal source for education statistics.[93] The success or failure of education statistics is largely a reflection of the state of record keeping systems at the school level. Improving the record keeping system at the school level improves the quality of data collected, its interpretation and the reports sent to the higher levels. This would in turn have a positive impact on the educational planning and decision-making at all levels of administrative units.[94]

[92] Hrach. 2006.
[93] NESIS. No Date). Revitalizing the School Records Management System in Ethiopia. Summary Report.
[94] Ibid

In the context of the African scenario, there is a need to develop standardized school record forms and to address the problem of absence of systematically compiled source data from which schools can easily fill out the Annual Education Statistics Questionnaire. Other hurdles to school records management are the lack of facilities for keeping school records and the lack of financial and material resources (computers, registers, paper, electricity and stationery) to produce the various school record forms.

I.3.1.2 Education Management Information System (EMIS)[95]

EMIS is designed to collect, compile, collate and analyze the school level data (students, teachers, facilities, finance, etc.) for policy and programme formulation, implementation and monitoring at different administrative levels.

African countries continue to face challenges in producing regular, timely and quality statistical data. The response has been to develop "African data" with comprehensive databases that are comparable across countries. It aims at promoting sustainable EMIS at the continental, regional, and national levels, ensuring that rigorous monitoring and evaluation of education activities are in place. One of the important goals of this EMIS is to establish an African Education Observatory, managed by the AUC, as a vehicle for coordinating EMIS activities. In the interim period, most of the EMIS revitalization is led by ADEA WGEMPS, the secretariat of the AU EMIS Restricted Technical Committee which advises on the monitoring and evaluation systems of the Plan of Action for Education. In line with the drive for African led solutions, an education indicators manual for the continent has been developed and is currently being piloted. Capacity building activities are ongoing, targeting regional bodies and Member States. An African Union Outlook on Education Database which has over 137 data variables[96] has committed itself to collecting national data directly from Member States to feed in to the African continental database.

I.3.1.3 EMIS in Africa: The Challenges

EMIS in Africa faces a number of challenges. Some of them stem from the lack of an appropriate legal and institutional framework to clearly lay down the obligations and define the collaboration between data providers and users. Some countries that have put in place such a framework still face the challenge of the inadequacy or non-enforcement of these existing instruments to support the production and dissemination of statistical information. This often manifests itself in low response rates and general absence of private sector statistics.

Another challenge facing effective EMIS in Africa is the fragmentation of the education and training sector, which is characterized by a multiplicity of ministries which have statistics directorates that are often poorly structured and have weak institutional frameworks. This fragmentation is exacerbated by the lack of clarity concerning the mandate of the various ministries. In the Ivory Coast, for instance, the pre-primary education sub-sector is under the control of the Ministry of National Education and the Ministry of Social Affairs and Family. Having multiple education and training ministries leads to a duplication of institutional and structural frameworks with numerous, separate EMIS systems operating, with limited collaboration and coordination. This leads to limited interaction among the various data producers, and the key stakeholders within the same ministry often fail to share information that could be vital for planning purposes.

[95] Section on EMIS is a summary of: ADEA WGEMPS. 2014. A U Outlook on Education, Continental Report.

[96] ADEA WGEMPS over the past years, as the lead technical agent for the African Union (AU)'s Human Resource Science and Technology Division's (HRST) Observatory.

The multiplicity of data sources, without an appropriate statistical information sharing and exchange mechanism, and without protocol in place under the leadership of National Central Statistics Office, is mainly the result of weak intersectoral coordination, dialogue and consultation mechanisms within the education and training sectors' data producers. There is a need to set up a unique repository of all national education statistics for achieving increased consistency and coherence of data that can be validated and released. These factors would have a huge impact on data quality and coverage and consequently on the overall quality and utility of statistical products.

The majority of the ministries of education throughout Africa are often weak in terms of advocacy for promoting visibility of statistics as a critical function of the development process. Strong commitment of governments in integrating statistics to support evidence-based monitoring and evaluation would trigger the development of accountability mechanisms of acceptable levels to permit the delivery of focused and responsive services to the target beneficiaries.

Generally, across the continent, EMIS departments are operating with personnel who are not adequately skilled, and who are prone to high turnover and attrition rates. Obviously, it is not possible to produce high quality statistics without the requisite competencies to execute statistical processes and coordinate the results with policy makers, planners and the other stakeholders.

The majority of Member States have reported experiencing limited skilled human resources across the entire statistical chain, particularly at the lower levels. The low levels of motivation of the existing EMIS staff - planners, statisticians and IT specialists - together with inadequate career development opportunities, lead to high turnover rates. These adversely affect the EMIS division's capacity to produce the expected quality statistical products, such as the annual yearbook and other relevant analyses, in time for policy and budget discussions. This challenge is compounded by inadequate information, communication and technology equipment. As a result, a vast number of African ministries of education, such as in Ghana, Liberia, Mali, Namibia, Swaziland and Zimbabwe, have relied on the technical assistance of consultants to perform some of these crucial EMIS activities.

I.3.1.4 Teacher Management Information System (TMIS)

TMIS is an information system designed to support the management of teachers' recruitment, deployment and skills development. In a large number of countries, teaching staff planners and managers face difficulties in this regard because the existing information systems do not give information on teacher supply. This frequently leads to inefficiencies in the recruitment and distribution of teachers.[97] A significant number of African countries do not have stand-alone TMIS. It is the norm for the EMIS to have a number of teacher specific questions integrated into the data collection instrument. The weak availability of data is thus a reflection of weaknesses in the EMIS system. In other countries, the only existing and comprehensive database for teachers is the payroll system. The payroll database can reside in the Ministry of Education's human resources department, the Ministry of Finance or a separate body mandated with public service staffing. The monitoring of teacher attrition and non-qualified and non-tenured teachers is particularly complex and often lies outside such databases.

The emerging trend is to develop comprehensive management information systems that are linked to EMIS, payroll system and capacity development related tools. In Rwanda, Uganda and Zimbabwe some forms of holistic TMIS are under development or are already in use. It is common to have the TMIS linked to the district offices reflecting the real time changes to the status of teachers being made at lower levels. Planning on capacity development, supply and demand are increasingly being

[97] http://unesdoc.unesco.org/images/0017/001787/178721e.pdf

made based on the information generated by the TMIS. The TMIS covers registration, licensing, teacher appointments and performance measures based on new terms and conditions of service for teachers. Key staff have been trained to maintain and sustain the TMIS and have been provided with online support for six months during the roll out.[98] In Malawi and Nigeria, an RTI supported initiative is used to track teachers during their training. The Government of Uganda has partnered with UNICEF to produce a mobile-based system which, among other things, collects information on some of the teacher indicators.[99]

I.3.1.5 Financial Management Information System (FMIS)

I.3.1.5.1 School Level

A glaring lack of mutual accountability between primary schools and parents, poor financial record keeping and bad management are threatening the quality of basic education in seven African countries, including Uganda. A report by Transparency International (TI) found schools in Uganda, Sierra Leone, Ghana, Senegal, Morocco, Madagascar and Niger as having poor governance systems and practices. They have limited availability of financial documentation at the district education offices and schools, which have been impeding the progress to achieving the six aims of the Education For All (EFA) initiative and achieving the Millennium Development Goals (MDGs). The survey also revealed a lack of interest on the part of parents in the proper running of schools. Decentralization, however, has led to devolution of financial management responsibilities to regional or district levels and has given communities more say in how schools are run.[100]

I.3.1.5.2 National System

Strong Public Financial Management (PFM) systems are essential for effective and sustainable economic management and public service delivery.[101] Traditionally, systems and processes that deal with the various aspects of public finance have been weak, non-transparent, and often incapable of developing adequate budgets, monitoring public expenditures, assessing the effectiveness of public investments and providing reliable data for macroeconomic modelling.[102] PFM reform is seen helping African governments to borrow more easily and cheaply. It assists them in attracting investment, improving accountability to their citizens and driving efficiency gains which can help them to deliver more with limited funds.[103]

I.3.1.6 Data Quality Mechanisms

Data Quality Assessment Framework (UNESCO Institute for Statistics)

The production of education statistics requires institutional, organizational and technical capacity at the national and sub-national levels. The UNESCO Institute for Statistics (UIS) is the focal point at UNESCO to develop and implement evaluation frameworks that assess the quality of data produced by the education sector. Called the Data Quality Assessment Framework (DQAF), the instrument incorporates current international standards for quality data in the education sector, with particular reference to the African reality.[104]

I.3.2 Processes

M&E systems that intend to monitor more input related factors in the education sector include:

I.3.2.1 School Inspection and Evaluation System

[98] http://efc.idnet.net/projects/project.jsp?webid=191
[99] http://www.unicef.org/uganda/9903.html
[100] http://www.theguardian.com/katine/2010/feb/23/primary-education-africa
[101] http://www.oecd.org/dac/effectiveness/pfm.htm
[102] http://www.worldbank.org/afr/wps/wp25.pdf
[103] http://www.ey.com/Publication/vwLUAssets/EY-The-reward-of-reform/$FILE/EY-The-reward-of-reform.pdf
[104] SADC Regional View: Synthesis of Seven Country Assessments October 2009

A review of the literature on school inspection and evaluation systems across the continent seems to indicate a focus on control and monitoring rather than on providing support and planning for the development of the sector. Many evaluation systems are staffed by school inspectors and evaluators from ministries of education, who visit schools periodically to collect information and enforce standards. This system introduced by former colonial bureaucracies is still used in Nigeria and was formerly used in South Africa. It has since evolved to include Whole School Evaluation systems in Botswana, Namibia, Tanzania and Zimbabwe.

More and more African countries are now embracing the concept of internal school inspections and evaluations. This is either done on a peer to peer basis, or by school principals and school management committees that are composed of staff, students, parents and community members. This system is in response to the old and heavy handed traditional external school evaluation and inspection process.

I.3.2.2 Teacher Evaluation Systems

Unlike the School Inspection and Evaluation profile of Africa, there is no 'one-size-fits-all' approach to teacher evaluation in the continent. The how, what and why of this approach are determined by a multiplicity of factors, such as the maturity of the education system, the geography of the country, the resources at its disposal and the influence of teacher unions. Managing performance is often associated with negative connotations. Needless to say it is a critical but an under-resourced and under-developed system.

Some of the challenges affecting the system include limited Teacher Management Information Systems (TMIS) and large numbers of para- and under-qualified teachers. The absence of comprehensive teacher registers in many African countries limits the efficiency of any evaluation process. The Democratic Republic of the Congo illustrates this point perfectly where there are a limited number of school inspectors who are poorly trained. Even where teacher management information is collected, it is not complied into one national report for easy referencing.

I.3.3 Outputs and Outcomes

There is an increasing realization that the expansion to access to education has not had the kind of impact it should have had on children in terms of outcomes. Despite the link between quality of education and economic performance, many learners in African countries leave school without mastering the basic competencies in literacy, numeracy and life skills.[105]

I.3.3.1 Classroom Assessment [106]

Student learning is also assessed in the classroom as an integral component of the teaching-learning process. However, much of this kind of assessment is subjective, informal, immediate, ongoing and intuitive, as it interacts with learning where and as it occurs, monitoring student behaviour, scholastic performance, and responsiveness to instruction. In addition to ongoing teacher observation, it involves classroom questioning and dialogue, the marking of homework, and the use of portfolios. Its function is primarily formative. It occurs during learning (rather than when learning is presumed to be complete) and is designed to assist or improve students' acquisition of knowledge and skills. Its role is to determine students' current levels of knowledge, skills or understanding, to diagnose problems that they may be encountering, to make decisions about the next instructional steps to be taken (to revise or to move on), and to evaluate the learning that has taken place in a

[105] AU Plan of Action for the Second Decade of Education.

[106] Adapted and Summarized from Kellaghan T and Greaney V. 2003. Monitoring Performance: Assessment and Examinations in Africa. Association for the Development of Education in Africa.
http://toolkit.ineesite.org/toolkit/INEEcms/uploads/1089/Monitoring_Performance_Assessment_Examinations.pdf

lesson. Classroom assessment may on occasions be more formal, as when teachers administer a quiz or end-of-term examination.

There is evidence, however, to show that the quality of these practices may be deficient in many ways. Observations of practices in African classrooms confirm this. Current practices across the continent have been found to be of low cognitive level and teacher-dominated, while the students are passive. This is further compounded by poorly qualified teachers, large class sizes, poor facilities, and a shortage of learning materials, all of which are common challenges across the continent. Reforms have also been slow as classroom assessment has received little attention in such reforms whose purpose is to improve student learning.

Promising practices are emerging with South Africa's Assessment Resource Banks (ARB), which comprise a set of tasks designed to assess specific learning outcomes and are provided to schools in areas serving pupils hailing from low socio economic communities. In Swaziland, materials provided to schools include general information about classroom assessment, item banks, tests, item specifications, and remediation and enrichment materials.

I.3.3.2 Public Examinations [107]

Examinations in Africa serve a number of important functions which reflect the social and educational contexts in which they are administered. First, they control the disparate elements of the education system, helping to ensure that all schools teach to the same standards, something that was especially necessary in colonial times when most schools were under private management. Second, they are used to select students in pyramidal education systems in which the number of places diminishes at each successive level. Third, the examinations have a certification function, though this is often lost sight of because of the emphasis on their use for selection. Formal certification of academic achievements, however, can be important for some students in gaining access to employment or further training although lower level certificates are losing their currency in the labour market as the numbers possessing them has increased. Finally, public examinations may serve an accountability function for teachers and schools. This will especially be the case when the results of students' performance on examinations are published.

The continued existence and central importance of public examinations in Africa can be attributed to a number of factors. They are perceived to allocate scarce educational benefits in an objective and unbiased way, though concern has sometimes been expressed that they may discriminate against minorities, rural populations, girls, and students whose first language differs from that of the examination. They provide a specification of clear goals and standards for teachers and students. They can be used to underpin changes in curriculum and teaching methods, and to maintain national standards. Finally, especially at the end of secondary schooling, they legitimize membership in the international global society and facilitate international mobility.

I.3.3.3 National Assessments

National assessments are large scale surveys designed to describe the achievement of students in a curriculum area, and to provide an estimate of the achievement level in the education system as a whole at a particular age or grade level. This normally involves the administration of tests either to a sample or to the entire population of students.

[107] Adapted and Summarized from Kellaghan T and Greaney V. 2003. Monitoring Performance: Assessment and Examinations in Africa. Association for the Development of Education in Africa.
http://toolkit.ineesite.org/toolkit/INEEcms/uploads/1089/Monitoring_Performance_Assessment_Examinations.pdf

The goal of such measurements is to review the curriculum and pedagogy so as to strengthen teacher professional development and bring in other policy changes aimed at improving student performance. A number of African countries have some system of national assessment which, however, varies in its complexity, purpose and in the end use of the data gathered. Formerly, evaluation and assessment focused mainly on student assessment, but its scope now has become broader and includes greater use of external school evaluations, appraisals of teachers and school leaders, and expanded use of performance data.[108]

I.3.3.4 International Learner Assessments

African governments are increasingly recognizing the value of evaluation, and are increasingly looking at the possibilities of utilizing international assessments. International assessments are large scale assessment studies, whereby data are collected from a number of countries. International assessments have become important sources of information for monitoring student learning outcomes. In particular, these assessments allow cross-country comparisons based on international benchmarks which help individual countries to evaluate the strengths and weaknesses of their own education systems from a broader context.[109]

20. I.4 Conclusions

It may be seen from the above digression that the dominant four forms of assessments have had negligible changes in the continent in the last three decades, especially in terms of how they have been implemented. The assessment tools have, however, risen in prominence, particularly the national assessment, and it is anticipated that moving forward more African countries may join international assessments, as they seem to feel that the value derived from the benchmarking exercise and the feedback obtained in this form are too valuable to be ignored.

The way forward is to strengthen the role that the assessments play, particularly the national and the international assessments, in adequately describing learner outcomes. The detailed data obtained from the evaluations should be used to advocate for exerting a greater influence on policy-making, curriculum design and resource allocation. The real value of these exercises will be obtained only by establishing a built-in mechanism for the evidence-based outcomes to feed into the processes of policy-making and programme implementation resulting in substantial, qualitative and visible improvements to the education system.

I.4.1 Policy Issues

Policy Issue No. 1: Holistic Approach to Education M&E Systems

The multi-country analysis clearly exposes the current approach to monitoring and evaluation as being highly fragmented. There is an urgent need for properly coordinating and integrating the educational Monitoring and Evaluation systems. To do this, a holistic approach is warranted as it will allow for the consideration of complex issues which would otherwise continue to operate in isolation and not as part of a comprehensive and wider system.[110] Such complex issues will include the social, economic, political, cultural, technological and environmental contexts that may influence and suitably mould the larger structural issues at play in the functioning of the education sector.

Given that the education system itself is made up of different parts, it only makes sense to have a multi-faceted framework for M&E. Education systems operate at several levels, international, regional, government, local authorities, schools and communities. Interspersed within these levels

[108] http://www.oecd.org/edu/school/Synergies%20for%20Better%20Learning_Summary.pdf
[109] http://unesdoc.unesco.org/images/0021/002178/217816e.pdf
[110] Burns. 2007.

are student assessments, teacher appraisals, teacher management systems, school evaluations, school heads appraisals and evaluation of the education system. The users of the information at the other end of the system such as clients, students and parents/guardians also contribute to the structure of this holistic framework. There is also a strong case for participatory and flexible approaches to evaluation based on systems thinking and action research as these will allow for the consideration of multiple paths in relation to the macro and micro contexts.[111]

Policy Issue No 2: Adopt a Policy of Systematic Approach to Evaluation Capacity Development

There are many players engaged in capacity development, often pushing different models. Africa would benefit from a comprehensive, systemic and long-term perspective on the development of evaluation capacity. Such a perspective would address issues such as staff turnover, the sustainability of evaluation systems and capacities within organizations and stakeholder groups. It will also suitably fit in to the varied contexts that one finds across the continent. Further, it will adapt itself over time to suit the environment within which it has to operate. It is germane in this context to note that when the evaluation of development initiatives uses a holistic approach with critical reflection and learning, there is a shift away from "measuring and proving", towards "understanding and improving" (Burns, 2008).

Policy Issue no. 3: Adopt a Policy of Indigenous Approach to Monitoring and Evaluation – A Case for 'Made in Africa' Evaluation

The Africa Evaluation Association (AfrEA) has committed itself to developing a 'uniquely African approach to evaluation'. The emphasis is on how context, culture, history and beliefs shape the nature of evaluations, specifically in the diverse and often complex African reality.[112] These African evaluation guidelines produced by AfrEA in 2007 guide evaluations practised in Africa today. They were produced after a process of serious consideration, contextualization and adaptation of the Joint Committee Standards for Programme Evaluation. Besides, other activities are taking place in the continent, such as the African Union's Plan of Action for the *Second Decade of Education for Africa.* Since 2006, the continent has been pursuing a set of eight priority areas in the education system. This has led to a number of M&E initiatives such as the African Union Outlook on Education reports prepared for the annual COMEDAF meetings. A set of indicators to monitor the Second Decade Plan of Action process has been developed and is currently being piloted. The process of data collection and analysis has revealed a large number of structural challenges to the successful monitoring and evaluation of the plan of action. At a regional level, communities designed for regional integration, such as the East African Community and the Southern African Development Community, have also put in place M&E systems. There has been some attempt to integrate these into the wider African plan through common reporting measures. However, across communities, M&E systems do not speak to each other and there not any real learning and information sharing platform between them. This responsibility may have to be underpinned for the over-arching African Union.

Policy Issue No. 4: Strengthen EMIS System in Preparation for Post-2015 Agenda

The post-2015 debate has generated numerous discussions on the progress on the achievement of international goals, such as the Millennium Development Goals and the Plan of Action for the Second Decade of Education in Africa, whose deadline is also 2015. The findings of the various evaluations used in these discussions indicate that there have been varied degrees of progress in the achievement of the goals. Such variations reflect the varying contexts in which the pursuit of these

[111] United Nations Inter-agency Resource Pack on Research, Monitoring and Evaluation in Communication for Development. 2011.

[112] http://www.afrea.org/?page=MadeinAfrican

goals has occurred. This realization has led to suggestions that the post-2015 agenda ought to be crafted with the understanding that contextual differences do influence performance.

It may be pertinent to note in this context that the evolution of M&E in Africa, as in many other developing countries, has been strongly influenced by external factors. The discipline has evolved mainly as a tool used in development work and mostly introduced by donor or partner organizations. Naturally, the emphasis was and still is to a large extent on meeting donor requirements. Porter and Goldman (2013) note that the supply side of M&E has to a large extent been influenced by donor demands. The literature suggests that the source of the information generated will have a bearing on how it is used. In an ideal post-2015 scenario, the use of the products of M&E may need to be fully internalized and institutionalized for routine decision-making by both internal and external users creating a balance between the needs of the host country and its operating partners. Data from UNICEF meta-analysis in seven regions where it implements programmes have shown that the quality of evaluation and its use tend to be high when it is country-led and managed.[113] The main issue in such cases has been the extent of internalization of such systems into the regular M&E of the education sector of these countries. Therefore, the post-2015 M&E agenda in Africa needs to address this issue.

Another issue to be considered for the post-2015 agenda is the lack of synchronization of the demand for and supply of the needed information over the entire time period of the planning and implementation of the programme cycle.

Bagele (2012)[114] has argued for a broader and more integrated approach to Monitoring and Evaluation, one which considers the individual's role in society as well as 'how we relate to all participants in research'. An expanded African Monitoring and Evaluation paradigm in the Education 2030 context may consider viewing the evaluator and/or researcher as a healer, looking at data about knowledge as relational and holistic, particularly data sources such as folk tales, counter narratives, proverbs, stories and spiritual accounts. In the contexts of the multi-ethnic communities of Africa, data sources may be dominated by traditional local cultural contexts. They may be in the form of folk narratives, folk arts, use of folk idioms, symbols and proverbs in communication, folk legends and tales. It is important to give adequate representation to such sources of key informants in the data collection work. It is important to keep in mind the point that such key informants may also be the local opinion leaders representing the local traditional belief systems and hence may be instrumental in influencing behaviour changes in their own local communities. Doing data collection in such contexts properly would call for the employment of well-trained professionals who could devise and use suitable methodologies to capture essential information from such sources, as these would be useful for planning behaviour change programmes in the education plan. Such information which would be normally qualitative in nature should also be professionally integrated in to the M&E information so that their importance is not lost sight of in programme planning and implementation.

Another anchor in the African perception is the concept of Ubuntu,[115] and its implications for M&E systems, which some countries integrate into various aspects of education ranging from curriculum to M&E systems. These and other sources, such as experienced key informants, may be considered to constitute what is broadly defined as quality data sources.

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[113] Commentary on Country-led Monitoring and Evaluation Systems, Better Evidence, Better Policy, Better Development Results. UNICEF. "http://www.unicef.org/ceecis/resources_10597. html" www.unicef.org/ceecis/resources_10597

114 Van der Westhuizen, G. 2013. 'Review of Indigenous Research Methodologies by Bagele Chilisa'. *African Evaluation Journal 1(1),* Art. #44, 1 page. http://dx.doi. org/10.4102/aej.v1i1.44

115 The concept 'Ubuntu' refers to free to use and share, at home and in business. 'Ubuntu" is an ancient African word meaning 'humanity to others'. It also means 'I am what I am because of who we all are'. The Ubuntu operating system brings the spirit of Ubuntu to the world of computers and the world of open source software.

The growing demand for accountability has encountered a low capacity to deliver on Monitoring and Evaluation demands across the countries of the continent. This may partly be a result of the top down approach to M&E, where governments impose systems with little regard for the realities on the ground, and usually at the behest of donors. Nevertheless, efforts are underway to increase capacity, continent wide. The African Evaluation Association has spearheaded this growth with the inception of regional chapters spanning Central, Eastern, Western, Northern and Southern Africa. In addition to these, country chapters, the newest of which is in Zimbabwe, have also been established. Further, AfrEA has also developed a set of African Evaluation Guidelines (2002) which can be used to assess and improve the quality of evaluations. With the launch of the African Evaluation Journal and regular AfrEA conferences, there is a lot of room for the modification of these guidelines in line with the post 2015 agenda.[116]

The African Evaluation Association, which has witnessed steady growth, is an organization to watch and support. Given its mandate and reach, as well as itsgrassroots origins, AfrEA has the potential to address the challenges of the lack of integration in M&E systems in African countries, the top down approach, the lack of capacity and the lack of coordination.

The post-2015 horizon demands a smarter approach towards Monitoring and Evaluation. In a paper produced by the World Bank on evaluation capacity development, it has been noted that while some African countries understand the importance of regular evaluation, such activities tend to generate poor quality data, a large amount of underutilized data is collected and there are a number of uncoordinated sector data systems using different definitions and data collection periods.[117] Some African governments, such as South Africa and Uganda, have responded to these situations by establishing government-wide monitoring and evaluation systems. Often African countries cannot afford the cost of comprehensive M&E activities and as a result are forced to rely on donors. The new consensus on the data revolution may serve to address this and other challenges. In recognition of the fact that the quality of data on which many development initiatives are based is poor, and the fact that there have been wide gaps in data coverage, a strong movement towards new, cheaper and better means of collecting, analyzing and disseminating data is being propounded. Tools such as SMS surveys, direct beneficiary feedback and a range of "big data" can be part of the revolution. This paradigm shift recognizes that 'data collection processes should build on country systems and improve alignment between global monitoring needs and strengthening national capacities.'[118]

21.

22. I.4.2 Ethiopia

Key Recommendations

1. The data collection, processing and exchange mechanism among different M&E systems which are related to inputs, processes and outcomes need to be integrated. Access to data by various central government units, as well as the educational authorities at various levels right down to the schools, has to be improved.
2. The EMIS database needs to be revised to include comprehensive data on human resources and information on the state of infrastructure and assets. Currently, performance measurement data is weak at the district and school levels, and financial management information should be more comprehensive, particularly in relation to the cash flow of school finances, expenditure reports, implementation of school plans and school contributions.

116 Patel, M. 2013. 'African Evaluation Guidelines', *African Evaluation Journal 1(1),* Art. #51, 5 page. http://dx.doi.org/10.4102/aej.v1i1.51

[117] https://ieg.worldbankgroup.org/Data/reports/monitoring_evaluation_psm.pdf

[118] file:///F:/M&E%20Framework/PARIS21%20helps%20engineer%20a%20data%20revolution%20%20%20paris21.org.html

3. EMIS capacity building is needed at the lower levels of the system, at districts and schools.
4. The monitoring and evaluation system could also be enriched by the establishment of mechanisms to develop and maintain sustainable capacity at the school level to organize, keep and use data on financial transactions, enrolment flow, inspection results and feedbacks, examination and learning assessment results and other school activities like purchasing, and the handling and distribution of school materials.

South Africa

1. A revised sector M&E framework should encompass a capacity-building strategy at all levels of the basic education system, especially at the provincial and district levels. This could include training in the use of the national template for the district-wide ANA report (as envisaged in the Action Plan to 2014). The Department of Basic Education (DBE) should play a more active role in ensuring the utilization of ANA reports for diagnostic and improvement purposes.
2. Principals and school management teams should be empowered to do better self-evaluation and link this to school improvement plans using available data, such as attendance registers, mark sheets and the forthcoming district ANA reports. Teachers and administrative staff should be trained on why the collection of accurate information is important.
3. Recruitment of evaluators should lay emphasis on selecting people with the relevant skills and experience by Provincial Education Departments (PEDs; e.g. for WSE) and ongoing professional development of staff engaging in evaluations.
4. A sector learning network should be established to foster a community of good M&E practitioners through interaction with existing provincial M&E and other relevant structures.
5. Liaison should be established with M&E service providers, like Palama, to ensure that their training provides integrated skills development on integrated district and programme planning, project management and M&E.

Zimbabwe

23. Promote the use of statistical information throughout the MOE and other stakeholders - from the schools to the main office.
24. The skilled personnel and other resources for the EMIS unit need to be increased in terms of quality and quantity and right skills achieved through structured and continuous training programmes. Heads of schools and teachers, district and provincial officers, and officers in the main office, need to be trained to value statistical information and use it for planning at the school level.
25. Although the Ministry of Education has a website, there is hardly any essential information on it for use. This review strongly recommends that the Ministry provides essential information on its website for its provincial offices, district offices and schools to access information without necessarily having to travel to the concerned offices to obtain it.
26. Enhance the M&E section of the MOE and ensure close cooperation between the EMIS section and the section for supervision to work together for getting better results.
27. Synergies between the different departments in the Ministry of Primary and Secondary Education will have to be improved through planning activities and financing of all processes. These partnerships should also look at other relevant ministries, civil societies and various administrative levels right down to schools and communities. Strong coordination is of paramount importance in enhancing strong synergies.
28. The national examinations council, ZIMSEC, should procure sufficient vehicles to deliver examination papers to each of the schools used as examination centres. Actually shortage of vehicles is seen in all departments and districts and provinces not only zimsec.

29. The number of reports to be written per inspector per month should be reduced to five in order to allow for a more thorough analysis, and to permit their executing other duties.

Country Case Studies

In this section, in-depth information from the three selected countries in Africa, namely, Ethiopia, South Africa and Zimbabwe, is presented to demonstrate different stages of development of an M&E system in education. The countries have been selected on the basis of: (1) geographical distribution; (2) recent trends in education policy development related to M&E; and (3) availability of literature and data**.**

Ethiopia

Background

According to the Education and Training Policy (MOE 2002), modern education was introduced to Ethiopia nearly a century ago. However, the education and training offered during these long years have had limited positive impact on the lives of the people and on national development. The country's skills education and general education still need to be reformed further in order to meet the country's contemporary challenges in education and overall development.

During both the initial phase, and the more planned and coordinated expansion phase of modern education after 1941, the primary objective of education in the country has been to produce a trained workforce that can run the emergent government bureaucracy. Limited vocational education was introduced both at high school and college levels during the 1950s and 1960s. The education of the time nonetheless did little to change the students' outlook or help them break the cycle of dependence on the government for employment by developing the needed capacity in them to create their own jobs in the private sector. Moreover, throughout these many years, there has never been a clear policy by which to evaluate and accordingly shape the direction of education and training in Ethiopia.

Beyond having limited policy direction, the previous educational system had challenges in terms of access and quality making it necessary to review education and training policy in 1994. Accordingly, the education sector's vision "to see all school-age children get access to quality primary education by the year 2015" was introduced. The policy seeks to realize the creation of trained and skilled human power at all levels who will be the driving forces in the promotion of democracy and development of the country. It further seeks to ensure that educational establishments become teaching-learning centres for shaping well-rounded, competent, disciplined and educated people through the inclusion of civic and ethical education with the help of well-trained, competent and committed teachers. It is also expected to ensure equity of female participation, pastoral and agro-pastoral people and those with special needs, in all education and training programmes, thereby increasing their role and participation in development (ESDP III, MOE, 2005).

Monitoring and Evaluation in the Education Sector

The MOE is responsible for the overall monitoring and evaluation of the education system together with the REBs. The MOE Department of Planning and Policy Analysis consolidates information provided by implementing departments, the REBs/WEOs and teacher training institutions in order to track progress and evaluate achievements. Both ESDP and GEQIP require the institutionalization of a wider range of monitoring and evaluation approaches to contribute to a planning culture that focuses on processes, outputs and outcomes as well as on tracking the delivery of inputs by the targeted timelines. School plans have largely specified monitoring processes for specific activities,

but the degree to which they have been able to specify appropriate procedures for the activity in question is variable.

Standard *woreda,*[119] (traditional districts in Ethiopia), and regional plans have well-developed systems for monitoring physical and financial implementation of the most significant inputs, but there appears to be very little monitoring of processes, including classrooms and textbook distribution. Supervisors are responsible for the former, but lack skills in classroom observation and feedback. Regions lack a framework for assessing the performance of Colleges of Teachers' Education (CTEs), and are therefore constrained in their monitoring of LAMP. *Woreda*s have learning achievement data, but do not make use of them while formulating their plans.

Different M&E systems contribute to the whole functioning of the education system and provide information for policy development and implementation.

Coverage

Access to data by various central government units, as well as the educational authorities at various levels right down to the schools, needs to be improved. The EMIS data base needs to be revised to include comprehensive data on human resources and information on the state of infrastructure and assets. Currently, performance measurement data are weak at the district and school levels, and financial management information could be made more comprehensive, particularly, in relation to the cash flow of school finances, expenditure reports, implementation of school plans and school contributions.

Capacity Strengthening

EMIS capacity-building is needed at all levels, especially at the lower levels of the system, namely, districts and schools. Personnel could benefit from training on the entire EMIS cycle. This coupled with improved resources, suitable capacity development programmes, ICT equipment and financial support, could improve the quality of reporting on statistical information.

Inadequate human capacity to collect and process data at school and *woreda* levels has reduced the accuracy of the information. Some schools and Woreda Education Offices (WEOs) do not keep timely and proper records. They also lack training, which makes it difficult for them to fill in the data forms correctly. This has a direct negative impact on the quality of data aggregated at *woreda*, regional and national levels, which in turn, affects policy decisions and subsequent planning. Besides, dissemination of information from national and regional levels downwards to *woreda*s and schools, and effective utilization of data at these levels are far below the requirements.

EMIS capacity-building at the *woreda* level lacks personnel training, especially in statistics, data entry, storage, processing and reporting, and the provision of the necessary equipment. Networking of all schools with WEOs, REBs and the MOE will ensure timeliness of data exchange and facilitate the flow of data in all the needed directions. At the school level, there is need to focus on suitable capacity building to understand and use relevant school data.

School Management Information

The school record keeping system forms the basis for keeping track of school level statistical information. The practice of school records-keeping in Ethiopia is highly fragmented largely due to limited know how and weak appreciation of the implication of good record keeping systems on the generation of useful statistical data. Proper training and motivation of staff should achieve the expected results.

[119] Districts in Ethiopia.

South Africa

Background

With the advent of independence in 1994, the emphasis on education policy in the country has been on providing equitable access to education for all. M&E plays a crucial role in assessing the coverage, timeliness and quality of programmes that are implemented accordingly.

In 2009, the Department of Education was split into the Department of Basic Education and the Department of Higher Education and Training. The National Department of Basic Education is responsible for formulating policy, setting norms and standards and monitoring and evaluating all levels of education. The national department shares a concurrent role with the Provincial Education Departments (PED) for school education. These PED's are guided by the overarching national policies, within which they have to set their own priorities and implementation programmes. The role of the national department is to translate the education and training policies of government and the provisions of the Constitution into a national education policy and to provide the needed legislative framework.

The Office of the Presidency introduced a National Development Plan (NDP) in 2012, within the country's long term strategic vision for 2030. Similarly, the Government's Medium Term Strategic Framework section on education was produced by the Office of the Presidency and the DBE. In 2009, a Department of Monitoring and Evaluation was created in the Office of the Presidency. As part of its work it has identified twelve priority outcomes to be achieved by the Government, on which the performance of ministers and departments will be assessed. The first of these outcomes relates to education which has improved quality of basic education.

Current Overall Appraisal of M&E Systems in the Education Sector

The DBE is responsible for education at the policy level. Operational responsibility is assigned to Provincial and District Departments of Basic Education. The DOE came up with a comprehensive list and map of schools and their physical characteristics. These data were compiled into a large database known as the School Register of Needs (SRN).

A revenue sharing formula allocated to the education sector was also developed by the central government which gave blocks of funding to provinces to be used at their discretion. This formula was criticized for not taking education backlogs into account, and by 1998 the national Ministry of Finance consented to changing the block grant formula to add weight for health and education backlogs. In order to implement this formula, regular updating of the SRN database became a must. This new formula created an awareness of the need to revise and improve the register and develop a School Funding and Public School Norms and Standards, based on which funding patterns could be evaluated.

Both of the departments of education have specific directorates for monitoring and evaluation, and these are known as the Directorates for Research, Coordination, Monitoring and Evaluation (RCME). The Department of Basic Education has an adequately resourced Monitoring and Evaluation unit under the Directorate of Research Coordination Monitoring and Evaluation, as well as a newly established National Education Evaluation and Development Unit.

Senior managers in the Departments of Basic Education and Higher Education and Training have a fair understanding of the meaning and requirements of M&E. These units are supported by the Department of Monitoring and Evaluation of the President's Office and the National Education Evaluation Development Unit (NEEDU).

In 2007, the DOE produced an M&E Framework, which was reviewed following the separation of the departments into basic and higher education. Assessment of the framework has highlighted its weakness in spelling out clearly the monitoring and evaluation responsibilities of PEDs, and at the district level. It has been recommended that the revisions to the framework improve the guidance provided to provincial M&E departments. These reforms are still to be implemented, with the delay being in part due to a broader restructuring at the DBE.

While the Directorate for Research Coordination Monitoring and Evaluation coordinates research and holds the M&E function within the department, six other units in the department conduct their own evaluations. However, there does not seem to be an M&E plan in place as the framework. The diagnostic review of the M&E system does, however, recommend the drafting of detailed M&E plans to address this gap. A detailed Monitoring and Reporting Plan could perform this function by consolidating individual programme and policy monitoring and reporting. The review also recommends that the M&E plan forge a closer link with National Treasury's Framework for the Management of Programme Performance Information.

Monitoring and Evaluation in the DBE is done through the School Administration and Management System (SA-SAMS) for school and educator information. Records are uploaded at the school level and updated in real time. Records on learners form part of the LURITS. Evaluations such as the Whole School Evaluations are conducted with the participation of supervisors from the department, school heads, and School Governing Bodies. Incidentally, the NEEDU is also responsible for school assessment looking mostly at evaluation of why the school performs the way it does rather than how it has performed. The DBE through its Provincial Education Departments conducts two specialized surveys annually. These are known as the Snap and Annual Surveys for Ordinary and Special Needs Education Schools. In order to ensure data accuracy, once institution managers at these education institutions complete both surveys instruments, these are passed onto circuit and district officials who are required to authenticate the data before passing them on to the next level.

The overall impression given to this study is that there are too many requirements to be monitored and implemented, and too many multiple levels and organs for the Monitoring and Evaluation of the education sector in the country. At the highest level is the Department of Performance Monitoring and Evaluation under which falls the National Development Plan that includes a Medium Terms Strategic Framework. Separate from this are the Delivery Agreements signed between the President and his Ministers, the Action Plan to 2019 and the Annual Performance Plans, as well as the longer term Towards Schooling 2030 document.

Provincial Education Departments develop Annual Performance Plans which cover district level operations. The DHET Directorate of Research Coordination Monitoring and Evaluation (DRCME) have oversight. The new Department of Higher Education and Training (DHET) is responsible for higher education institutions (HEIs), further education and training (FET) colleges and adult learning centres. It is also responsible for the system of workforce skills development, including the National Skills Authority, the Sector Education and Training Authorities (SETAs), trade testing centres and skills development institutes that had previously been developed and managed by the Department of Labour, all of which need to be monitored or evaluated.

Over the course of one year, the DBE still has to deal with many reports: Annual Performance Plans; Whole School Evaluations; NEEDU Reports; Annual National Assessments; EMIS data and Budgets.

Monitoring and Evaluation has typically been fragmented with the responsibility being shared across the various units of the DBE, and similarly in the DHET and its affiliates. There is a move towards

centralization. The DRCME in Basic Education is the repository of research and evaluations and should any department want to do an evaluation it has first to check whether the data it needs are already in the possession of the DRCME.

The introduction of Norms and Standards for school infrastructure and the experience of the DQAF exercise in South Africa should hopefully be able to monitor and evaluate this facet in a more coordinated manner. The Accelerated Schools Infrastructure Development Initiative will be easier to evaluate. While survey data collect information on outcomes, outputs and inputs, weak school management systems means that there are gaps in process/operational data. Unfortunately, administrative capacity in schools and districts for data capture is often limited and this could undermine the quality of data even with sophisticated electronic systems, such as SA-SAMS and LURITS.

South African Schools Administration Management System (SAM) has been introduced and is expected to eventually replace data collection through surveys. It may be advantageous to extend these applications to all educational institutions – government and private alike.

The Integrated Quality Management System (IQMS), gradually expanded and strengthened since its inception in 2003, has been closely monitored in recent years, partly through nationally employed 'IQMS monitors', given its importance for acknowledging teacher professionalism.

Automated systems bring with them their own challenges, mostly related to a lack of capacity and cost. The 2012 report on the progress to date of the Continuing Professional Teacher Development (CPTD) Management System[120] points to serious difficulties to overcome, in terms of budgets and human capacity, if the originally envisaged online system is to be pursued. Lessons can be learned from parallel developments in the medical profession which has successfully managed to implement automated systems across the country.[121]

The diagnostic review report recommends that the Monitoring and Evaluation of teacher professional development must be strengthened through closer links with the South African Council for Educators (SACE).

The new individual students and teachers tracking computer systems need skilled personnel to use them. These systems will have to be updated from time to time to reflect new developments and cater to changing needs. There are two issues of coordination. One is the central coordination of activities at lower levels: schools, districts and provinces, and planning at these levels aligned with the central planning and monitoring system. The other is effective coordination between line ministries, especially the departments of higher education.

Zimbabwe

Background

The need to ensure quality and efficiency in the public sector has propelled the Government of Zimbabwe to adopt suitable Monitoring and Evaluation frameworks. Initially, the focus was on Performance Management, which was subsequently replaced by Results-Based Management. The uptake of RBM has been slow and riddled by some challenges. Indications are that there is little enthusiasm for the model within the public sector. The Ministries of Education (MOE) are no exception. A key feature of RBM is its focus on performance indicators, which as their name implies,

[120] The status of the CPTD management system, available on the SACE website.
[121] Action Plan

are used to gauge performance against benchmarks. Developing accurate and reliable performance indicators has proved to be problematic. Education stakeholders such as teachers have challenged the use of pass rates as a performance measure for their work arguing that the passing of pupils is influenced by many variables and not necessarily restricted only to their instruction. This resistance has limited the acceptance and utility of RBM.

A plethora of economic blueprints in the country has also affected the Monitoring and Evaluation policy environment. The first of these was the Economic Structural Adjustment Programme (ESAP) which dictated a leaner public sector and the introduction of school fees. This impacted negatively on the education and other service delivery sectors. The government soon abandoned ESAP and it was followed in quick succession by economic blueprint programmes, for example, the Zimbabwe Programme for Economic and Social Transformation (ZIMPREST) in 1998. Two years later, the country introduced the Millennium Economic Recovery Programme (MERP) which was soon replaced by a new economic blueprint. The current dominant economic model, despite not being an official government document, is the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET). Through this blueprint, the country hopes to 'improve the quality and increase access to education and training at all levels' and review education and training policies (ZIMASSET, 2013). It remains to be seen how this will be achieved.

In the education sector, the Ministry of Primary and Secondary Education has adopted a quasi-decentralized education system up to the provincial level. A mostly top down approach is used where officials from the head office monitors schools through a review of annual and monthly reports. The trajectory of these reports begins at the school level and passes through the district, provinces and head office, to the Permanent Secretary, then on to the Minister and finally to the Cabinet. Weekly, monthly and annual plans are also used by the Ministry, all guided at present by the Medium Term Education Strategic Plan 2011-2015. Meetings and minutes of meetings are mostly used to monitor progress. The challenge lies in trying to thoroughly analyze the large volume of reports that the head office receives on a monthly basis. This process is unlikely to flag critical points either for remedial action or for further studies and analyses. There is limited capacity in the districts and provinces to do this. The government has moved to address this weakness by providing training on RBM through the Civil Service Commission to staff members. Entry into a training programme is by referral from a superior officer.

The Ministry of Primary and Secondary Education has multiple stakeholders. These include teacher unions, the Zimbabwe Schools Examination Council (ZIMSEC), donors, non-governmental organizations, parents and students. The first three groups are well represented in the discourse around education and training with several teacher unions, a national examinations council and multiple external partners. These entities operate autonomously, but engage regularly, with the Ministries of Education, along with consultation on a termly basis between teacher unions and the Permanent Secretary, and also monthly donor engagements and ongoing consultation with the examinations council. Parents and student groups can only contribute at the school level as there are no parent or primary and secondary school student organizations at present. Vibrant engagement with the direct beneficiaries of the education sector, as is the case in Kenya, needs to be given consideration.

This study has found that despite the country's many challenges, there is a healthy appetite for looking for robust evidence for decision-making, both within the Ministries of Education and the public domain. Existing systems recognize this and have been employed to meet this demand. In the absence of coherent and effective adoption of Monitoring and Evaluation frameworks, this demand may not be met. It is, therefore, incumbent on the Ministry of Primary and Secondary Education to lead the paradigm shift towards a culture of monitoring and, more particularly, of evaluation. The

recommendations coming out of this study include the timely dissemination of statistical reports produced by EMIS to all stakeholders and increased investment in hiring, retaining and training staff with M&E capabilities at every level. Heads of schools, in particular, need to be trained in this crucial area as they are the primary producers of data on which all decisions will be based. In terms of coordination, the synergies among the different departments in the Ministry of Primary and Secondary Education should be improved through planning activities and financing of all processes together.

Current M&E System

The MTSP (2011-2015) aims at revitalizing the provision of relevant, quality, inclusive and holistic information on education, sports, arts and culture[122] for all Zimbabweans. It sets out to restore the professional status of teachers in order to provide a highly motivated and competent professional teaching cadre who can provide high quality learning opportunities for all learners in the country. In terms of curriculum, the system aims at revitalizing learning quality and relevance and put in place a renewed and well-integrated curriculum in primary and secondary schools, supported by a system of effective learning assessment along with the provision of the necessary learning materials. The Ministry has also developed a monitoring and evaluation plan which involves supervizing the planned activities and assessing performance, using instruments such as the reporting formats developed by the Quality Assurance Department. This plan is meant for monitoring implementation of the MTSP, ensuring quality and access, assess programmes, document good practices, as also assess the strengths and weaknesses of the system. The M&E plan further strives to coordinate reports so as to facilitate evidence-based policy formulation. The M&E plan is based on several assumptions including 1) finances will be available, 2) human resources will be appropriately placed to carry out the assignments and 3) material resources and other facilities will be available in sufficient quantities. Unfortunately, the Ministry of Education has experienced resource challenges almost from its inception. Other sources of information for M&E within the Ministry include EMIS reports, school supervision reports on learning and teaching processes, financial reports, quarterly reports and reports on teacher establishment. However, due mainly to lack of human resources (both in quantity and quality) the implementation of the plan has not been found to be effective.

Challenges of EMIS

The Ministry of Education needs to closely coordinate the functions of M&E at Provincial and Head Office levels. It remains a policy imperative that Ministry of Education staff continue to receive training on how to collate and summarize the data. The proper storage and presentation of the data remain key issues being addressed by the Association for the Development of Education in Africa's (ADEA) Working Group on Education Management and Policy Support (WGEMPS), which has, in recent years, assisted the Ministry of Education with technical aspects related to collecting, processing, analyzing and presenting statistical data. These need to be internalized by the staff of the Ministry.

The EMIS system faces another challenge, namely, inadequacy of skilled personnel within the EMIS unit to manage information from 8,065 schools in the country. In addition to this huge number of schools, there are also some institutions providing early childhood development, non-formal education, private schools and other skills development and technical and vocational schools, which the system is not able to cover in its data collection processes. The ED 46 form is not used to collect data from the non-formal system and yet this is a large sector which is also under the MOE and which caters to children who fail to enrol in the formal sector. In the recent past, the utility of the

[122] To be in compliance with MDGs 2 and 3, 'Holistic' covers Sport, Arts and Culture, SNE, Non-Formal. Basic education includes ECD, Primary and Secondary (I-IV) education.

data produced has been low because the analysis and dissemination have not been done on time due to lack of adequately skilled personnel. Attitudes towards statistical information are generally poor and this makes the collection of data inaccurate as well.

However, with support from partners, the MOE has embarked upon linking Head Office, Provincial and districts offices through internet, but due to limited finances the process has been slow and a lot of the information management system processes are still being done manually.

Establishment of Proper Links

The overall supervision of Monitoring and Evaluation comes under the Department of Planning within the Ministry of Education which is expected to ensure the provision of at least one planning officer at the provincial level. The school supervision and inspection system has continued to evolve over the years. The MOE has, in the past, provided vehicles with the assistance of partners, for easy access to schools. Each of the seventy-three districts in the country has at least one vehicle for school supervision. School Development Committees, which are made up of parents and community members, have also provided districts with vehicles for such supervision. This has been facilitated by the Better Schools Programme of Zimbabwe.

The Ministry of Education has appointed Schools Inspectors at the district level to supervise schools. Though not adequate in numbers, they still supervise heads, ICT teachers and write reports on the institutions. Supervision is coordinated by the District Education Officers, who analyze the reports, write covering notes and minutes, and submit the reports to provincial offices. The provinces do similar analysis and pass them onto the main office.

The Quality Assurance Department is responsible for both primary and secondary supervision, monitoring and evaluation of the school system.

At provincial offices, deputy directors analyze the reports to identify the main issues raised after which copies are returned to the schools for further action on any improvements suggested.

In summary, evaluation remains a weakness in the MOE both due to inadequate funding and lack of capacity.

Capacity Strengthening

The capacity to analyze and use statistical data and information is essential in a complex system like the Ministry of Education. The ability to identify users and the type of information they require, and to share experience is needed. The ability to coordinate information from different sources within the sector ministry and other line ministries and other national and international partners is also needed. This requires strong management professionals and other support staff both in terms of adequacy and competence.

Overall Review of the Status of M&E Systems in Latin America

30. I.1 Background

I.1.1 Status of M&E System in Education in Latin America

The current movement to develop M&E systems in Latin America has emerged out of a desire for greater transparency and a recognized need for measuring performance in the public sector. In most Latin American countries, after the return of democracy in the late 1980s and early 1990s, this movement seems to have aligned well with broader citizen demands for better governance and more accountability. International development agencies also have been advocating for more evidence-based decision-making in the education sector. The current emphasis on M&E in the continent can also be attributed to an aspiration, particularly seen in the newly democratically elected governments of the region and also advocated by the United Nations, towards establishing a results-based focus on the management of education. In other words, it may be stated that governments in the region have begun to endorse the idea of developing a strategy to ensure more efficient use of scarce resources in order to achieve the desired educational goals.

The policy agendas implemented in many countries of the region also require more accurate and coordinated data systems that can be supportive of their development efforts. For instance, central governments have started feeling the need to be able to track resources transferred to lower tiers of government. Countries that had earlier tied education resources to enrolments have started feeling the need for more efficient school record-keeping systems. Student and school level data sets with multiple variables are also seen to be essential to the design and implementation of national accountability systems.

This overview of Latin America provides comparative information on the existing policies and practices of M&E in education, based on the UNESCO analytical framework. Information has been gathered for this study from the 15 countries that participated in UNESCO´s comparative assessment (TERCE): Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Paraguay, Dominican Republic, and Uruguay. Further, information has also been collected on M&E systems in education from Bolivia and El Salvador. Table 1 describes the M&E systems in 17 Latin American countries. This offers analysis of the information collected on the M&E systems which monitor the input, process, and outcome related factors in education. The following input related M&E systems are considered: school record-keeping systems (SRKS), education management information systems (EMIS), and teacher management information systems (TMIS). Information has also been collected from the region pertaining to two process related M&E systems: student inspection and evaluation systems (SIES) and teacher evaluation systems (TE). Similarly, information has also been gathered on the following two output related M&E systems in Latin American countries: examination systems (ES) and student assessment systems (SAS).

Overall, there is wide variation across the region in the development and implementation of M&E systems. While most countries have school record-keeping systems and education management information systems, only one-third of them have teacher management information systems, and just one country – Chile – has a financial management information system. While fewer than half of Latin American countries have school and teacher evaluation systems, this appears to be a growing trend across the continent. Only two countries in the region carry out end of cycle examinations. However, 15 out of 17 countries have national student assessments and a growing number of countries participate in international evaluations.

Table 1: Overview of M&E in Latin American countries

Country	M&E Systems							
	INPUT				PROCESS		OUTPUT	
	SRKS	EMIS	TMIS	FMIS	SIES	TES	ES	SAS
Argentina	✓	✓	✓					✓
Bolivia	✓	✓						
Brazil	✓	✓						✓
Chile	✓	✓	✓	✓	✓	✓		✓
Colombia	✓	✓	✓		✓	✓	✓	✓
Costa Rica	✓	✓					✓	
Dominican Republic	✓	✓						✓
Ecuador	✓	✓				✓		✓
El Salvador	✓	✓						✓
Guatemala	✓	✓			✓		✓	✓
Honduras	✓	✓						✓
Mexico	✓	✓	✓		✓	✓		✓
Nicaragua	✓	✓						✓
Panama	✓				✓			✓
Peru	✓	✓	✓			✓		✓
Paraguay	✓	✓	✓			✓		✓
Uruguay	✓	✓						✓

SRKS: School Record Keeping System; EMIS: Education Management Information System; TMIS: Teacher Management Information System; FMIS: Financial Management Information System; SIES: School Inspection and Evaluation System; TES: Teacher Evaluation System; ES: Examination System: SAS: Student Assessment System
(Source: Data collected as part of this study)

The range of the level of development and the consolidation of M&E systems within the region is substantial. For example, while some countries, such as Brazil, Chile, Colombia and Mexico, have established and long running school record-keeping systems and education management information systems that are easily accessible to different stakeholders, other countries, including Costa Rica, Ecuador, Guatemala, Paraguay, and Peru, have only recently developed M&E systems and they are still less consolidated in the above aspects. Yet, other countries have more precarious school record keeping systems which are also not updated frequently (e.g. Bolivia, El Salvador, Honduras and Dominican Republic). They are also often difficult to access. In some school systems, the technology to visualize the data (e.g. GIS mapping systems) is ahead of the quantity and quality of information available on schools and the schooling system. However, over the last two decades, governments across the continent have made major efforts to make school-level data more accessible to principals, teachers, and parents.

The growing body of evidence that confirms that teachers are the single most important school level determiners of learning outcomes has had the effect of intensifying the focus of policy makers and international development agencies on the aspect teacher quality policy reforms. A review of teachers and teaching policy has identified three emerging areas of teacher reforms in Latin America: teacher recruitment, teacher training and teacher incentives. The first step in the process of such reforms towards conceptualization, design and implementation of effective teacher policies, is to develop a comprehensive monitoring and evaluation system.

Several countries have developed proper teacher management systems in order to manage teacher recruitment and deployment. Policy makers and researchers have also used this information to

better understand issues of teacher mobility and dropout rates, and to design effective induction and professional development programmes. This includes action to formulate policies in order to attract and retain teachers in the most disadvantaged schools. Currently, 6 out of 17 Latin American countries have teacher information management systems in place, which are accessible to the different stakeholders.

The abundant evidence on the importance of teacher quality in the delivery of education services has also motivated researchers and policy makers to develop suitable evaluations which may allow them to identify effective and ineffective teachers. Over the last ten years, six countries in the region have invested heavily on the evaluation of teacher performance. While Mexico and Colombia introduced their teacher evaluation systems in the late 1990s, certain implementation issues have undermined their effectiveness. Mexico is currently revamping their teacher evaluation system to remedy this deficiency. Colombia´s system though is lagging behind in this regard. Chile´s 2003 Docente Mas remains the most effective system in the continent. Paraguay and Ecuador have been implementing teacher evaluations over the last seven years and Peru is developing a similar comprehensive system as that of Chile. While most of these systems are still formative in nature, they are often used as determinants for providing incentives for better performers, as well as for the dismissal of low performing teachers.

Over the last decade, there has also been a trend in Latin America toward increasing school autonomy, devolving responsibility and encouraging responsiveness to parent and other stakeholder needs. For example, some countries require schools to develop improvement plans with concrete learning targets along with action plans which describe how they will achieve them. Others have implemented school-based management systems by decentralizing decision-making authority from the government to the school level.

Some governments in the region have introduced school inspection and supervision systems, supportive of such decentralization and school management reforms. As part of this support system, for example, school inspectors provide technical assistance to schools in the development of their plans and monitor suitability and adequacy of resource allocation. Currently 6 out of 17 countries have such school inspection and evaluation systems. However, one persisting problem in most of these countries is the lack of needed resources and the availability of only a limited number of qualified supervisors who can so assess and monitor a sufficient number of schools.

Recent decades have also seen an exponential growth in Latin American countries which can accommodate national, regional and international student assessments. By the end of the 1990s, most countries in the region had some form of national testing system in place, as evidenced in Table 1. However, the implementation of national student assessments has shown variations across the Latin American countries. In some countries, student testing has amounted to no more than sample-based tests to assess the overall quality of the education system. For example, in Costa Rica, Nicaragua, Panama, Paraguay and the Dominican Republic, sample-based assessments are conducted systematically every year or every few years. The other Latin American countries have census-based national assessments in place.

Similarly, the implementation of school accountability systems varies widely across countries. Though these are census-based assessments, the degree to which low performing schools receive any assistance from their governments varies significantly. For example, Argentina and Uruguay publish only aggregate test scores, and they do not publish school-level results. Colombia, Ecuador, Guatemala, Honduras, Mexico and Peru publish average test performance for each school, which are also highly accessible, with parents and the press using them on a regular basis. Brazil uses a school´s average test score and grade repetition rates to construct the Index for Basic Education

Development. The federal government uses IDEB scores to set national education goals and to identify low performing states, municipalities and schools. States, municipalities and schools use the information in order to set targets and develop suitable improvement plans to achieve them. The government also widely disseminates the IDEB scores to parents and the public.

In 2008, Chile implemented a comprehensive and systematic system of school accountability. Similar to accountability systems in the United States, the United Kingdom, and the Netherlands, Chile´s system sets minimum performance standards and ranks schools according to their overall performance and progress as measured by the national assessment and other measures of outcomes. It also envisages sanctions against low-performing schools, including closure when a school does not show adequate improvement. Information on a school´s ranking, average test scores, and other indicators are also widely disseminated to families and the public.

Over the last few decades, several countries of the region have made suitable institutional changes to accommodate their different M&E systems. A number of countries have created autonomous or semi-autonomous government agencies which specialize in evaluation and statistics to manage M&E systems. For example, Brazil, Chile, Colombia, and Mexico have created independent or semi-independent evaluation agencies that implement and manage student assessments and evaluations. Panama has also recently established a semi-autonomous national evaluation institute that conducts student assessments and disseminates the results. However, in most of these cases, the school record-keeping system, the education management information system and the teacher management and evaluation system are still located in different divisions within the Ministry of Education. The advantage of separating the functions as mentioned above is that it may shield the student assessments and other evaluations from possible political pressures. However, such advantages may be offset by the lack of proper coordination of information to enable formulation of suitable and focused public policies.

I.1.2 Policy Issues of M&E Systems in Latin America

M&E systems in education are at different stages of evolution in different countries across the continent. In some countries – Bolivia, the Dominican Republic, El Salvador and Nicaragua – M&E systems are fragmented, functioning in the different divisions of the Ministry of Education. Such systems were often set up to support different programmes and were apparently not designed to be sustainable over time. The data are not collected systematically and are usually not found useful for policy formulation or for shaping informed public opinion. While a few of these countries have made efforts to improve the accessibility of the information to different stakeholders through the use of data visualization software, the lack of updated information renders such information less useful. As they are, these systems could be classified as being in the premature stage of development.

Some other countries in the region – Costa Rica, Ecuador, Guatemala, Panama, Peru, and Paraguay – have developed the institutional and organizational conditions conducive to the setting up of functional M&E systems in the education sector. These countries systematically collect data and transforms them into useful information for policy makers, schools, teachers, and parents. Some of these countries – Ecuador, Guatemala, Peru, and Paraguay - use technology to make the information readily accessible for different stakeholders. While Panama has been a leader in the creation of a semi-independent institution to manage its M&E systems, it lags behind other countries in making the information available to the public. Ecuador, Paraguay and Peru have expanded their M&E systems to include teacher evaluations. However, these systems are still in the early stages of development. The M&E systems in these countries do not necessarily function in a coordinated manner and do not form part of a comprehensive information system. Thus, they should be classified as being in the fragmentary stage of development.

Over the last few decades, a group of Latin American countries, namely, Argentina, Colombia, Mexico and Uruguay, have consolidated M&E systems that are functioning, but often not in a coordinated manner, in order to provide relevant and quality information for policy makers and other stakeholders. These countries would be classified in the independent development stage. For example, Argentina and Uruguay have well-established school record keeping and educational management systems, and long running student assessments. Argentina also has a teacher management information system. Both of these countries have the necessary institutional and organizational systems and technical capacity to maintain sustainable M&E systems and provide quality information to different education stakeholders. However, for political reasons, both countries mainly publish aggregate level data; and school level data are not easily accessible. Colombia and Mexico were two of the pioneering countries to establish comprehensive M&E systems in the 1990s. However, certain implementation issues, often associated with external factors (e.g. civil war in Colombia) undermined their impact. Both countries are now redesigning their M&E systems so that they can become more interconnected and responsive to policy needs. Colombia and Mexico have the technical capacity and semi-independent evaluation institutions (ICFES in Colombia and INEE in Mexico) in place to manage their M&E systems in a more synergetic manner.

Brazil and Chile´s M&E systems in the education sector are the region´s best practices to date. Brazil´s M&E system, while limited in scope, functions in a coordinated manner and provides efficient and effective information to different education stakeholders. Brazil´s success is partly due to the technical and coordinating capacity of INEP, which collects, manages and disseminates the information provided by the school record keeping system, the management information system and the student assessments. While some Brazilian states and municipalities have developed teacher management information systems, they do not operate in a coordinated manner. Chile´s M&E system is comprehensive and covers all of the input, process, and output related factors in the education sector considered in this review. In 2011, the Chilean Congress enacted a law that created a National Quality Assurance System, which created a Quality Agency, responsible for managing student assessments and the supervision of schools. The law has clearly defined the roles and responsibilities of each national institution and the coordinating role of the Ministry of Education, including its M&E system. This new institutional arrangement has further sustained and coordinated in a more optimal way Chile´s M&E system, with the exception of the teacher evaluation and incentives systems, which continue to operate independently.

There are several reasons for the substantial variation in the development stages of M&E systems across countries in Latin America. First, some countries have had well-established and functioning M&E evaluation systems in other areas before they were developed in education. These countries had the institutional and organizational capacity to collect data, construct the M&E systems and disseminate the information. Second, and more recently, international development agencies have begun to provide incentives and resources to build good M&E systems. Some countries developed plans and took advantage of these resources to design and implement their M&E systems. Third, in some other countries, the M&E systems were developed in response to certain emerging policy needs. For example, in Brazilian states and municipalities, federal resources were allocated based on student enrolments. This policy required the federal government to build an efficient student record keeping system. Chile´s per pupil voucher programme, which is now being weighted by each student´s family background, is another example of how policy drives the need to build efficient M&E systems. Fourth, some countries, especially those in the premature and fragmentary stages, have faced obstacles, including a lack of technical capacity, and resources and funding restrictions. Fifth, the governments in some countries (e.g. Argentina, Panama and Uruguay) also face political pressures by teacher unions and other education stakeholders against the publication of the school

level information. Regardless of these variations, most Latin American countries are moving towards the development of more comprehensive and coordinated M&E systems.

The most important policy issues for the Latin American Countries regarding their M&E education systems are identified below.

I.1.2.1 Legal Framework for M&E

Some Latin American countries have established different legal frameworks for the maintenance of sustainable M&E systems that would generate the needed quality information for decision-making by different stakeholders. Some countries have national and education M&E laws (e.g. Brazil and Colombia) and Quality Assurance Laws (e.g. Chile, Colombia) which define the roles and responsibilities of the different institutions. Other countries have enacted transparency laws (e.g. Brazil, Chile, and Mexico) which require different agencies to make the different components of M&E systems public, which is conducive to the development of a culture of transparency and evidence-based policy-making. However, it must be noted that most countries in the region still lack a proper and well-defined legal framework to support and duly mandate the proper development and sustainability of an M&E system.

I.1.2.2 Institutional Design

Some countries have created autonomous or semi-autonomous agencies to provide direction to and coordination of the M&E systems. For example, Chile has created two autonomous agencies (Education Quality Agency and Education Superintendence) to monitor school quality and to audit the use of public resources. Other countries (e.g. Argentina, Brazil, Colombia, Mexico and Uruguay) have established semi-autonomous agencies. Panama has created a quality agency which is a branch of the Ministry of Education. The independence of the agencies can foster trust in the data quality and thereby ensure more public support for evidence-based policy actions. The Ministry of Education plays a key role in other Latin American countries in developing and coordinating M&E systems. Coordination and coherence, however, still pose a challenge in most countries of the region, especially those with more comprehensive systems of M&E (Chile and Colombia), and also those with federal systems (Brazil and Mexico). Political influence is still an issue in some countries with less autonomous agencies (e.g. Argentina, Brazil, Mexico, Panama and Uruguay).

I.1.2.3 Technical Capacity

The technical capacity of different stakeholders to generate M&E systems, craft and monitor policy, improve practice and monitor school performance remains a major challenge in Latin America. While many countries are still in the early stages of creating M&E systems (Bolivia, the Dominican Republic, El Salvador, and Nicaragua), most others have developed the technical capacity and institutional conditions conducive to the setting up of functional M&E systems. These latter countries systematically collect data and transform them into useful information for policy makers, schools, teachers, and parents. Brazil´s and Chile´s M&E systems in education are Latin America´s best practices to date. Most countries, including Brazil and Chile, have developed capacity more for using M&E systems to design and monitor policy and conduct research than for improving practice and monitoring school performance. A lack of adequate resources often hinders the countries' ability to build internal capacity and specialization. These issues need special attention of policy makers.

Dissemination

While most countries in Latin America have made major progress towards improving the dissemination of information generated by M&E systems (e.g. student assessments) to different stakeholders (policy makers, researchers, schools and parents), further efforts are needed to

improve the publication and distribution of the information. Some countries (e.g. Brazil, Chile, Colombia, Mexico and Peru) disseminate school level data and use the M&E systems for policy research. Other countries in the region (e.g. Ecuador, Guatemala and Paraguay) publish school level data, but the information is rarely used for policy research. The governments do not publish school level results in Argentina and Uruguay, but micro-level data generated from M&E systems are used for policy research. There is limited information available in Bolivia, El Salvador, and Honduras. The technology to suitably visualize data is often not matched with the quantity and quality of information published. The challenge for many countries is how to push for the publication of useful data for schools and parents. These limitations are often politically motivated. For instance, there is the apprehension that the teachers´ unions may pressure the governments not to publish school level test scores.

I.1.2.4 Evidence-based Policy-making

In Latin America, many education policies and programmes are still being conceptualized, designed, and implemented without a solid, supporting empirical foundation. This is often due to a lack of technical capacity on the one hand for producing evidence-based data, and on the other hand to a lack of a culture of looking for such evidence for policy formulation, which is often done even in the absence of such supporting evidence. Many countries now generate abundant data that still do not inform policy-making. Moreover, less developed nations in the region usually lack the needed resources and technical teams with the needed capacities to generate and use the information brought out of M&E systems to inform decisions taken.

I.1.3 Recommendations for Latin America

The following points are considered as important recommendations for the development and implementation of effective and policy-friendly M&E systems for the Latin American countries.

I.1.3.1 Create a Legal Framework for M&E in Education:

The evidence on the best practices in the region suggests that development and implementation of a proper and well-defined legal framework is an important foundation for building M&E systems. This would greatly help generate stability by clearly mandating the defined roles and responsibilities of the different functionaries, and also the type and extent of information to be published. There are several ways of doing this. Each country may have to develop its own legal framework for mandating M&E that may best suit its own individual and special requirements. Again, this may be done from a close study of the available alternatives (e.g., transparency laws, national M&E laws, education M&E laws, etc.).

I.1.3.2 Develop an Effective Institutional Design:

The expansion of the M&E systems in Latin America will depend upon strong institutional mechanisms to improve the coordination between the related functions of such systems. There are already some best practices in the region which show how institutional design is a key component for the development of a well-coordinated and coherent M&E system. For example, some countries have created autonomous institutions, which have proved effective in building trust in the data produced. However, most countries continue to lack coordination between the different components of M&E and there is often significant overlap across systems and indicators, which in turn generates confusion for stakeholders, especially the schools.

I.1.3.3 Build Technical Capacity:

While some countries have formed highly specialized teams and use state-of-the-art technology to collect, process, and disseminate information, others lack the ability to attract and retain qualified professionals to perform these kinds of tasks well. Countries need adequate budgets and incorporation of the needed recruitment rules in order to pay competitive salaries and offer

attractive working conditions and career development opportunities to enable the process of properly recruiting and effectively retaining qualified teams for performing such tasks. There is also a need to invest in building capacity for different stakeholders who may use M&E systems: policy makers, researchers, principals, teachers, and parents. Some countries have developed competitive research funds to foster the use of M&E (e.g. Argentina, Brazil, Chile, and Mexico). Countries may also incorporate M&E training as part of current professional development programmes for policy makers, principals, and teachers. Multilateral development agencies such as UNESCO may also consider publishing technical manuals for best practices for the development and use of M&E systems. Some countries (e.g. Brazil and Colombia) have also invested in providing training for the media in the proper appreciation and use of M&E information with a view to improving the quality and usefulness of educational reporting. Countries may be encouraged to participate increasingly in international assessments, information systems and national assessments, which again will go a long way toward improving their technical capacities for carrying out proper M&E activities over time.

I.1.3.4 Improve Dissemination:

M&E systems are found to be widely disseminated and used by national policy makers and researchers in several countries of the region. However, the information is less likely to be used by other key stakeholders, such as local policy makers, principals, teachers, and parents. This is due mainly to the way in which such data are presented and disseminated. The use of the most suitable data visualization technology, and simple paper and electronic school report cards, could help present the data in a more user-friendly form to help the different stakeholders who seek such data.

I.1.3.5 Develop Political Advocacy:

Any M&E system will attain credibility only to the extent to which its evidence is sought and used by policy makers and programme implementers. Where this does not happen, such systems will only end up as merely routine rituals. For achieving credibility, it may be necessary to provide the needed capacity within the systems to carry out policy research, prepare policy papers, policy notes and carry out effective advocacy exercises using advocacy champions so that the latter could convince the policy makers on the points advocated. Even as the proof of the pudding lies in the eating, the proof such advocacy efforts will lie in their resultant policy changes. The needed technical expertise for carrying out these tasks may be provided by UNESCO by developing and implementing suitable capacity development programmes in partnership with the countries concerned. Such capacities may in course of time be internalized by the countries concerned so that they become sustained over time. The thoroughness with which such exercises are done will ensure sensitization of policy makers and other key stakeholders on how the evidence so advocated can be used and why they are relevant.

Country Case Studies

In this section, in-depth information from three selected countries, namely, Brazil, Chile and Colombia, is presented to demonstrate different stages of development of an M&E system in education. The countries have been selected on the basis of: (1) geographical distribution; (2) recent trends in education policy development related to M&E; and (3) availability of literature and data.

Brazil

The Status of M&E System in Brazil

The development of an M&E system has played a fundamental role in the educational reforms introduced during recent years in Brazil. It is also important to mention that the Brazilian M&E system operates in a federal set-up, in which the 27 states and the 5,570 municipalities have the autonomy to implement their own M&E systems. The design of the M&E system is intended to foster integration between the federal ministries and the state and municipal secretaries. The challenge is to achieve in practice effective integration between the three tiers of government.

The M&E system in education has a legal basis. In article 9 of the National Education Guidelines and Bases Law (LDB), the federal government, inter alia, "V - collects, analyzes and disseminates information on education; [and] VI – ensuring a national evaluation process of school performance in primary, secondary, and higher education, in collaboration with the education system, with the goal of setting priorities and improving the quality of education." It is important to note that the National Institute of Educational Studies (INEP) manages and publishes all the reports of the M&E systems in education.

Today, Brazil has one of the most complete and complex M&E systems in education in the world. The system is used to formulate, implement and evaluate policies and programmes in the three tiers of government. The system comprises all the levels of education from early childhood to post-graduation and has good record-keeping systems, the production of educational indicators at all levels, student assessments and an accountability system. Technical changes have been made over time to improve the M&E system in education in order to meet not only the political needs for the implementation of policy decisions and programmes, but also to promote greater integration of the different components of the M&E system.

Education Inputs M&E Systems

School Record Keeping System (SRKS)

The SRKS in basic education is a yearly report with statistical information on schools and the schooling system published by the Ministry of Education and INEP jointly with the state and municipal secretaries of education. The SRKS publishes information on school facilities, teachers, enrolments, school schedule (e.g. extended school day, morning schedule, evening schedule), and student mobility. The principal users of the SRKS are the Ministry of Education, state and municipal departments of education, the National Board of Education, state and local school boards, education programme councils, civil society, the media, international organizations, researchers, school principals, teachers, and parents.

In 2005, the government began a major overhaul of the School Census, which started to collect information by units of information, namely, schools, teachers, and students. The SRKS is available for downloading from INEP´s website. The format of the SRKS is still too technical for the general public to access, which explains why researchers are the most frequent users of the data. INEP also publishes an annual synopsis of the school census with information disaggregated up to the state and municipal levels.

Education Management Information System (EMIS)

The EMIS system is a compilation of all the educational indicators produced in the SRKS. Some of the current indicators published are: the rate of promotion, the age-grade gap, school average class size, and school average class time. This information is available on INEP´s web site. The EMIS also receives information on educational indicators (e.g. years of schooling, adult literacy rate, etc.) from the Brazilian Institute of Geography and Statistics (IBGE), a division of the Ministry of Planning, Management and Budget. The Demographic Census and the National Household Survey also provide information to EMIS on net rates of coverage, years of schooling by gender, age and race, and indicators related to child labour, school meals, and access to programmes, such as Bolsa Familia[123]. These indicators are presented for Brazil, major regions, and the states. IBGE also has a data visualization system for the education and social indicators for Brazilian states and municipalities.

Financial Management Information System (FMIS)

The Financial Management Information System (FMIS) of Brazil is limited to the aggregation of indicators at the country level. The FMIS is an initiative of INEP in collaboration with several other institutions such as IBGE and the National Treasury Secretariat (STN) in the Ministry of Finance. The FMIS publishes the following indicators: education spending as a percentage of GDP; educationspending as a percentage of public spending; per pupil spending by level of education; per pupil spending as a percentage of GDP per capita and public spending by level of education.

Education Outcomes M&E System

Student Assessment System

The National Evaluation System of Primary Education (SAEB) was created in 1995. The diverse experiences with student assessments in the past have helped in shaping the needed organizational capacity (physical infrastructure, technical capacity, economic and political conditions) for establishing the SAEB. The latter has applied cognitive tests and background questionnaires to a national sample of 5th and 9th grade primary school students, and students in the third year of high school every alternate year. This system has been designed to provide information to the federal, state, and municipal governments. Initially, the SAEB did not generate specific school and student level information. In 2005, the government expanded the national assessment by testing all public school students in the 5th and 9th grades every two years (Prova Brasil). The government continued to test a sample of 11th-grade public school students and samples of private school students in 5th, 9th, and 11th grades. The school level assessment results were made available to the public for the first time in 2005. The change in the design of the national standardized student assessment has created a window of opportunity to introduce school accountability measures.

[123] Bolsa Familia is a compensatory social programme of Brazil, with a conditional cash transfer system to benefit the poor families. Bolsa-familia - Brazil´s flagship social program – provided low-income families with cash transfers in return for keeping their children in school and attending health care visits. Advocates maintain that the program contributed to reducing poverty and income inequality. Bolsa familia also increased school attendance, reduced drop out rates in primary and secondary school, and grade repetition in both levels of schooling. The program also increased health care visits, immunization coverage, and child mortality. It has further been noted that economic growth combined with effective targeted social policies (e.g. Bolsa familia) helped move nearly 40 million Brazilians out of poverty. The poverty rate in Brazil was cut in half (from 50% to 25%) and extreme poverty declined from 16% in 1990 to less than 4% in 2012.

The school level student assessments are also available for downloading from the INEP web site. Researchers need to formally request the student level data. INEP published a yearly report with the main results up to 2003. Since 2005, INEP has only published reports with the aggregate data by states and municipalities. In 2013, the National Literacy Assessment (ANA) was established, which is an annual census-based Portuguese and Mathematics literacy evaluation of 3rd grade students enrolled in public schools. ANA also requires teachers and school principals to fill out background questionnaires. The results of the ANA are available only to schools which have participated in the test.

School Accountability System

The Education Development Plan (PDE) legislation, enacted in 2007, included a new definition of quality and the development of improvement plans in low performing schools. The PDE established a new school quality indicator: The Index for Basic Education Development (IDEB). The IDEB constructs an index on a scale from 0 to 10 using school national assessment results and grade repetition rates. The federal government used IDEB to set national education goals and proposed to improve the national IDEB from 3.9 to 6 by 2022. This calculation is based on what INEP has estimated would be the IDEB score of the 20 highest-ranking OECD countries on PISA. The federal government has also used IDEB to identify low performing states, municipalities, and schools. The latter in turn have used the information to establish quality goals and develop improvement plans. The IDEB and the PDE have become the fulcrum of the agenda of the Ministry of Education. The IDEB has introduced transparency in its goals expected and the results achieved by schools at different levels of education.

The transformation of IDEB into a crucial component of the M&E accountability system has created the need for the federal government to make public the school level IDEB results. Different strategies have been used to disseminate the results. At first, individual school report cards that included IDEB scores and information from the SRKS were published. The reports were delivered to schools and also made available on the internet. Later, the federal government replaced the reports with excel worksheets with the variables used to construct the IDEB (assessment results and student promotion) both for schools and for the more aggregated levels of information (states and municipalities). The spreadsheets also publish the longitudinal information.

Chile

The Status of M&E System in Chile

Chile has been no exception to the desire of many nations to improve the quality impact of their public spending on education. The Ministry of Education has over the years developed an M&E system consistent with the national M&E framework, which emphasizes delivery and performance. In the 1950s, the Ministry of Education began to develop a school record-keeping system, a key input of M&E in the education sector. This was done mainly in response to the per pupil subsidy introduced in the private sector during the same time period and an increased role for inspection. Chile´s M&E system was further developed and improved in the 1980s and 1990s in response to the universal per pupil voucher instituted in 1981 and the national census-based student assessments in the early 1990s. Chile then introduced a school evaluation system and student assessments in 4th, 8th, and 10th grades. The M&E system became more comprehensive in the 2000s with the development of teacher evaluations and teacher and school incentives, and by 2010 with the introduction of a quality assurance system that included a more systematic pedagogical supervision system. Schools were ranked according to their relative adjusted performance and improvement over time.

There are four arms that operate Chile´s M&E system in education: the Ministry of Education, the Centre for Teacher Training and Research (CPEIP), the Education Quality Agency, and the Education Superintendence. The Research Division in the Ministry of Education, located in the Ministry´s Division of Planning, collects, manages, and publishes the M&E input related components. The Centre for Pedagogical Training, Experimentation and Research (CPEIP) manages the teacher evaluation programmes. The technical design and implementation is outsourced to the Centre of Measurement – MIDE-UC at the PUC in Chile. The Education Quality Agency is responsible for conducting and managing the student assessments, the school evaluation system, and the school accountability ranking system. The Education Superintendence audits the use of public funding at schools.

Chile´s M&E system in education, which fits into the national M&E framework developed by the Ministry of Finance, is one of the most comprehensive systems in Latin America. The Chilean system has three dimensions pertaining to the education function: inputs, processes, and outcomes. The input related factors are: school record-keeping systems, education management systems and teacher management information systems. The process related factors are: the school inspection and evaluation system and the teacher evaluation system. The outcomes related factor is the national student assessment system. The primary function of the Ministry of Education is to coordinate the different components of the M&E system and to integrate the information into analytical processes and to use that information, together with other financial information and policy priorities, to support decision-making in the sector. An important role of the PMCO in the Budget Office at the Ministry of Finance with regard to the M&E systems in the education sector is to provide technical support to develop process and performance indicators. The Ministry of the President is responsible for monitoring the priorities of the education sector and coordinating the same with the M&E systems in other sectors.

Education Inputs M&E Systems

School Record Keeping System (SRKS)

Since the return of democracy in 1990, the Research Division at the Ministry of Education has collected, processed and published data on schools (enrolment, demographics, academic achievement, address, school type (public, religious, for-profit), facilities, classrooms, length of school day, etc.), teachers and school leaders (profile of teachers and principals), students (demographics, attendance, grades, etc.), programmes (technology, textbooks, school meals, etc.) and education finance (school and system budget information). This information is published in raw form and can be downloaded from the Ministry of Education´s website. The information is also consolidated and fed into the EMIS.

Education Management Information System (EMIS)

Since the 1960s, the Ministry of Education had been publishing aggregate indicators on the school system in Chile (e.g. coverage, education levels, promotion rates, urban/rural classifications, modalities and literacy rates). In the 1980s, the government began to publish school level information on school type (municipal and private). Since the return to democracy, the Research Division at the Ministry of Education has constructed and published system and school level indicators using the school record-keeping system data and the other M&E system data for policy conceptualization, design, implementation, and monitoring. The following are some examples of education indicators published in the MOE´s annual publication: coverage, dropout rates, retention rates, spending as a percentage of GDP, per pupil spending, class size, school size, graduation rates, literacy rates, access to the internet, targeted programmes, school achievement, SNED results, teacher evaluation results, school mission and student demographics. EMIS also incorporates information from other M&E systems, for example, the National Demographic Census and the

National Household Surveys which collect information on the average years of schooling of the adult population.

Teacher Management Information System (TMIS)
Since 2003, the Research Division at the Ministry of Education has been gathering and publishing teacher level information (with specific codes) on teacher education (type of institution), teacher specialization (type of programme), teacher training and professional development, years of experience, rewards (teacher incentives, AVDI, AEP), teacher evaluation results, competency evaluation results, type of contract, work schedule (half-day, part-time, full-time), and employers. TMIS also collects and publishes information on teacher assistants. This system also consolidates information from the teacher evaluation systems.

Financial Management System (FMS)
Since the 1960s, the government has been publishing aggregate system level information on state expenditure on education. The FMS currently provides aggregate and school level information on the schools' (system´s) budget and resources received via the per pupil voucher, preferential voucher (weighted voucher), and shared financing (tuition). The FMS also gathers information on how resources are invested in schools, for example, how much is invested in the school improvement plan, teacher salaries, facilities, and how much is collected as profit for the school owner. This information is collected and published by the Research Division at the Ministry of Education and shared with the Education Superintendence which monitors the use of public resources. The Education Superintendence also publishes detailed school budget and investment information on the institutional website.

Education Process M&E Systems
School Inspection and Evaluation System
Since 2014, the Education Quality Agency, Chile´s public independent education evaluation agency, has been coordinating the education quality evaluation system to support low performing schools, enhance institutional capacities and guide schools in the development of educational improvement plans. Two to four supervisors visit schools classified in the lowest two categories in the national accountability system by the Education Quality Agency. The frequency of the visits is determined by the school´s ranking in the national accountability system. The Quality Agency publishes the school reports which includes information on strengths and weaknesses and recommendations for improvement on the institutional web site.

Teacher Evaluation System
A comprehensive and mandatory teacher evaluation is organized through the national system of teacher evaluation (Docente Más) and consists of a formal system of external teacher evaluation in the municipal school sector. This system is complemented by a range of reward systems, which involve teacher evaluation, namely, the Program for the Variable Individual Performance Allowance (AVDI)); the Program for the Accreditation of Pedagogical Excellence Allowance (AEP); and the National System of Performance Evaluation (SNED), which is a collective incentive for subsidized schools.

CPEIP coordinates Docente Más, AVDI and AEP including the definition of objectives, the validation of instruments, and the dissemination of results. Despite the single coordinating institution, there is considerable overlap across components of the three teacher evaluations and little articulation between them. For example, AEP and AVDI use similar competency tests and Docente Más and AEP use similar portfolios. Hence, teachers are rewarded for the results of different instruments measuring similar results, through different channels. The Ministry of Education coordinates the

technical implementation of the SNED program. There seems to be some duplication of efforts between the SNED index and the school ranking conducted by the Education Quality Agency.

Education Outcomes M&E System

Education outcomes are measured by the following assessments:

Student Assessment System

In 1988, the National Education Law, which was enacted the day before democracy was restored, provided the legal foundation and implementation details for SIMCE. SIMCE was to measure achievement of the fundamental curricular objectives and minimum contents set by the Ministry of Education and to get the school level results widely disseminated. Since its inception in 1988, SIMCE has undergone a series of changes. SIMCE was administered to fourth and eighth graders in alternate years between 1988 and 1994, and, in 1994, tenth graders were included in the testing cycle. In 1995, for the first time, the government began to publish school level test scores. In 1997, the government made student level test score data available to researchers. The IRT methodology implemented by SIMCE in 1998 allowed for the comparability of test scores over time. The SIMCE Commission in 2003 reviewed the SIMCE assessment and addressed questions, such as whether the tests were measuring the right areas, the frequency of the assessments, and whether they should be sample-based or census-based. Since 2006, students in 4th grade have been assessed every year, while students in 8th and 10th grades are assessed every 2 years. Students are tested in language, mathematics, and science (natural and social sciences). In 2010, a biennial census-based test in English for 11th graders was included and an annual sample-based physical education assessment was introduced. In 2012, new tests for 2nd grade in reading and 6th grade in language, writing and mathematics were introduced. Since 2009, the Education Quality Agency has coordinated and implemented the SIMCE assessments. A new SIMCE Commission was established in 2014 to revisit some of the same questions as those of the 2003 Commission.

School Accountability

The Adjusted Voucher law (Ley SEP) was the first initiative that introduced explicit school accountability mechanisms in Chile. The law, enacted in 2008, introduced a weighted voucher (50 percent over the base voucher) for disadvantaged students who attended publicly funded schools. Schools that received the weighted voucher were held accountable for their outcomes and progress on SIMCE. The Ley SEP accountability system ranked schools into three categories: 1) autonomous (high performing schools); 2) emerging (average schools); and 3) recovering (low performing schools). The ranking had consequences for emerging and recovering schools. Emerging schools were required to develop and implement an improvement plan and spend half of the Ley SEP resources on the plan. Recovering schools were required to spend 100 percent of Ley SEP resources on the improvement plan and if these schools did not manage to improve over four years, the MOE could revoke their license to operate and receive public funding. The school ranking system was widely disseminated to schools, families and the public. In 2011, Congress enacted the Quality Assurance Law, which established that the Education Quality Agency would rank schools into four categories. The new accountability system, which will be piloted in 2015 and implemented in 2016, has similar consequences for low performing schools and will replace the Ley SEP ranking.

Colombia

The Status of M&E Systems in Colombia

The Ministry of Education has an M&E system for programmes and projects, where each division prepares monthly progress reports on the indicators associated with the programme´s target. This information is used for policy formulation and to develop accountability systems that include performance, challenges and opportunities for improvement.

Education Input M&E Systems

School Record Keeping System (SRKS)

The Enrolment Information System (SIMAT) was implemented in 2003 with the objective of improving the quality of information reported by the secretaries of education and schools, and then fed into the system. In 2009, SIMAT began to include all schools under the responsibilities of the secretaries of education. In 2012, the Ministry of Education started using a census-based system under the 94 secretaries of education in order to be able to reach local authorities and schools that had not been previously included in to the SIMAT. The data collection process is implemented every year and it collects data on all students in public schools as well as some private institutions and tracks school changes over time.

The efforts to improve the quality of data collection have made the enrolment information more reliable for the purpose of designing policies and allocating public resources. The improvements made in the data collection process explain the changes in the trends of student enrolments and the rates of coverage observed since 2010.

The individual level data makes it possible to monitor the trends each year and allows the Ministry of Education to monitor the number of non-existent students included by the secretaries of education in order to get increased funds. This is apparent from the example that gross coverage declined from 104 percent in 2010 to 98.6 percent in 2011 after the adjustments were incorporated. Similarly, the total net coverage declined from 89.8 percent in 2010, to 85.4 percent the following year.

The government also uses a methodology (SICIE) to quantify and evaluate the standard of educational facilities. In 2006, the MOE provided specialized software to the secretaries of education and local authorities to create inventories of school facilities. The software also helps in consolidating the historical data available on the quantity and quality of school facilities, as well as any remodelling and construction efforts carried out.

Education Management Information System (EMIS)

Colombia´s EMIS consolidates information from the M&E systems to construct the following aggregate and school level indicators: student achievement, graduation rates and teacher evaluation results. Each secretary of education and municipality manages an EMIS system and regularly updates the information. The EMIS also provides the information to determine school coverage by each department and municipality. This information is made public and widely disseminated to different education stakeholders.

One important objective of the EMIS is to estimate the costs and identify the sources of public education funding. This allows the government to distribute resources in a more effective way among the departments and municipalities based on the number of students served.

Education Process M&E Systems

School Inspection and Evaluation System

Since 2012, school principals are mandated under the Sharing Law (ley de Convivencial) to conduct a self-evaluation of the quality of their school programmes and finances and submit a report approved by the school council to the local Secretary of Education. The Secretary of Education complements these self-evaluations with school visits and institutional evaluations. Each school is ranked into one of three categories, namely, High Performing (Libertad Regulada), Intermediate Performing (Libertad Vigilada) and Low Performing, based on a combination of results on schooling inputs (e.g. complying with health standards, internet connection, etc.), processes (results of teacher and principal evaluations), and outcomes (results on SABER). The school's ranking is a determinant of the

quantum of allocation of resources from the School Participation Programme to the school in the following year. Schools are required to use the results of the institutional evaluation to develop improvement plans that would focus on four components: 1) school management; 2) budget administration; 3) academic activities; and 4) community participation. The improvement plans are monitored by the institutional evaluation system.

Teacher Evaluation System

Colombia´s sweeping teacher policy reform (Estatuto de Profesionalización Docente Law 1278–EPD), enacted in 2002, is one of the most ambitious efforts in Latin America to improve teacher quality through higher entrance standards, teacher evaluations, and professional development. The National Civil Service Agency conducts the assessments, and ICFES oversees all the logistics of printing, distribution, application, and processing of the tests. The system is voluntary for teachers hired prior to 2002, and mandatory for other teachers. About 38 percent of Colombia´s 295,000 teachers participate in the programme. The following M&E systems have been introduced to implement the teacher competency-based promotion system:

Entrance Exams: Every year, the National Civil Service Agency administers a competitive public school teacher recruitment process for all candidates. The process includes, among other criteria (e.g. interviews), an entrance exam that measures content mastery, core competencies, experience, aptitudes, and inter-personal relationships. Teachers who score 60 percent or higher values in the entrance exam are hired (about one-third pass most years) for a two-year probationary period. The school principal must formally confirm the teachers' capacity after the trial period.

Annual Performance Evaluation: School principals assess the performance of every teacher at the end of each school year. Teachers who score above 60 percent may continue in service. Teachers rated 60 percent or lower for two consecutive years are dismissed. Some critics have pointed out that the principal evaluations are weak indicators of teacher effectiveness because most Colombian teachers receive almost perfect scores every year (Bruns, 2014).

Promotion-Based Competency Test: The promotion-based competency test is a national assessment carried out by the National Civil Service Agency and taken voluntarily by teachers and school principals who have a minimum of three years' experience in one of the teachers' four pay scale levels. The scale places teachers and principals in 3 levels based on their level of education (vocational degree or less, professional degree, graduate degree). Currently, almost 85 percent of teachers are concentrated in level 2 with 15 percent in level 1 and 1 percent in level 3. Promotions to the next pay scale within the education level are based on a teacher´s score on this assessment, which measures teaching skills, discipline specific competencies, and content knowledge. Teachers who score above 80 percent are eligible to move to the next salary level. Salary increases are substantial for the next level (over 80 percent). However, promotion is contingent on the resources available in the national budget. As a result, currently most teachers (over 90 percent) are concentrated in the lowest wage level within their degree level. On average, only one-third of teachers take the promotion test in a given year.

Education Outcomes M&E System

Student Assessment System

The Colombian Institute for the Evaluation of Schooling (ICFES), founded in 1968, is one of the oldest student evaluation agencies in Latin America. In 2009, ICFES became an independent agency (Law 1324), under the authority of the Ministry of Education, which manages its own budget and is responsible for the development and design of student assessments at all levels and the application of teacher and principal competency tests. ICFES currently assesses the quality of basic education through the SABER tests in 3rd, 5th, and 9th grades. The Institute also evaluates secondary

schooling (SABER 11) and higher education (SABER PRO). ICFES also coordinates the international assessments.

Since 2009, ICFES has been improving the design (specification design) and data collection process of the student assessments. Currently, the tests are comparable over time and the competency levels are clearly defined in each grade level. The SABER 5th and 9th grade tests have evolved from a sample-based test applied every three years to census-based assessment implemented every year beginning in 2012. The SABER 3rd grade yearly census-based assessment was created and implemented for the first time in 2012. In 2014, SABER 11 was revamped to make the results comparable to the SABER 3rd, 5th, and 9th grade assessments. The main changes introduced were the reduction in the number of tests from eight to five (mathematics, reading, sciences, social sciences and English) and the inclusion of open-ended questions. The school level and aggregate SABER test results are widely disseminated and are available for downloading on ICFES's web site. Researchers can also request student level data.

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